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# UTILITY PATENT APPLICATION **TRANSMITTAL**

KIHNJ40295 Attorney Docket No. First Inventor or Application Identifier Kihn Momentum Investment Systems...

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APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application	on contents.	Assistant Commissioner for Patents  ADDRESS TO: Box Patent Application  Washington, DC 20231			
* Fee Transmittal Form (e.g., PTO/SB/(Submit an original and a duplicate for fee process.)  Specification [Total Page (preferred arrangement set forth below)]  - Descriptive title of the Invention  - Cross References to Related Application  - Statement Regarding Fed sponsored Ference to Microfiche Appendix	ges 38]	Microfiche Computer Program (Appendix)     Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)     a. Computer Readable Copy     b. Paper Copy (identical to computer copy)     c. Statement verifying identity of above copies			
- Background of the Invention		ACCOMPANYING APPLICATION PARTS			
- Brief Summary of the Invention - Brief Description of the Drawings (if file - Detailed Description - Claim(s) - Abstract of the Disclosure  3.  X Drawing(s) (35 U.S.C. 113) [Total She  4. Oath or Declaration [Total Pag a.  X Newly executed (original or cop b.  Copy from a prior application (3 (for continuation/divisional with Box i.  DELETION OF INVENTOR Signed statement attac inventor(s) named in the see 37 C.F.R. §§ 1.63(d)  *NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F. IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON	ets 40]  ges 2]  y)  7 C.F.R. § 1.63(d))  16 completed)  18(S)  hed deleting prior application, (2) and 1.33(b).  PAY SMALL ENTITY  R. § 1.27), EXCEPT (37 C.F.R. § 1.28).	7. Assignment Papers (cover sheet & document(s))  8. 37 C.F.R.§3.73(b) Statement Power of Attorney  9. English Translation Document (if applicable)  10. Information Disclosure Copies of IDS Statement (IDS)/PTO-1449 Citations  11. Preliminary Amendment  12. X Return Receipt Postcard (MPEP 503) (Should be specifically itemized)  * Small Entity Statement filed in prior application Status still proper and desired (PTO/SB/09-12)  14. Certified Copy of Priority Document(s) (if foreign priority is claimed)  15. Other:			
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STATEMENT CLAIMING SMALL ENTITY STATUS

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(37 CFI	₹ 1.9(f) & 1.27(b))IND	DEPENDENT INVENTOR	KIHNJ40295		
Applic	Applicant, Patentee, or Identifier. John Kihn				
Applic	Application or Patent No.:				
	FiledorIssued				
	Title: Momentum Investment Systems, Processes and Products				
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TITLE: Momentum Investment System, Process and Product

#### **BACKGROUND OF THE INVENTION**

### Field of the Invention

The present invention relates to the assessment and management of financial assets and, more particularly, to systems, processes and products involving investment vehicles, particularly, mutual funds and the like.

# **Related Applications**

The present application is a continuation-in-part of earlier applications: Serial No. 09/426,956, filed on October 26, 1999, for Universal Asset Class Benchmark System & Process; and Serial No. 09/495,717, filed on February 1, 2000, for Real Time Benchmarking Of Investment and Financial Assets. The sole inventor in both of these applications is John Kihn, the sole inventor in the present application.

### The Prior Art

As of the year 2000, the mutual fund industry is one of the fastest growing financial industries in the United States. Investment in mutual funds often is preferred over investment in individual stocks and bonds because of four critically desirable characteristics: (1) broad diversification; (2) professional management; (3) liquidity; and (4) convenience.

A mutual fund is a financial intermediary, which sells shares to the public and invests the proceeds in financial assets including (1) stocks, (2) bonds and (3) cash financial securities. Obviously, a fund's profit and loss statement reflects interest, dividends and capital gains on one hand, and costs, expenses and capital losses on the

other hand. Ordinarily, highly skilled and highly paid management and research services are among a mutual fund's largest expenses.

Obtaining higher rates of return is a preeminent objective of mutual fund management and research. According to "portfolio theory", as developed by economists, every investment may be characterized by two measures — expected return and risk. R. Brealy, An introduction to Risk and Return for Common Stocks (1969). It is axiomatic that risk and expected return are correlated: the higher the risk, the greater the expected return; the lower the risk, the smaller the expected return. J. Lorie and M. Hamilton, The Stock Market: Theories and Evidence (1973).

Efforts to obtain higher rates of return have focused on technical analysis and fundamental analysis. Technical analysis theorizes that buying and selling patterns in financial markets are random occurrences that largely depend on investor psychology, without any predictable connection between future and past stock market data. Fama, Efficient Capital Markets: A Review of Theory and Empirical Work, 25 J. Finance 383 (1970). Fundamental analysis theorizes that stock prices are correlated with corporate earnings, and predictability depends on the availability of information or interpretations of information about relevant data. Cohen, Zinbarg & Zeikel, Investment Analysis and Portfolio Management, 739 (1973). Technical analysts "study past prices" and "buy stock", whereas fundamental analysts "study reports" and "buy companies". Sunny J. Harris, Trading 102: Getting Down To Business (1998). Neither technical analysis nor fundamental analysis, however, has provided a favorable edge in the assessment of future value of financial assets.

Much of both technical analysis and fundamental analysis relies heavily upon the mathematical procedure known as "indexing". Simply stated, indexing merely means collecting and analyzing financial information about a group of financial assets and deriving there from quantitative measures that are thought to be useful in assessing value. Widely known and used daily indices include (1) the Dow Jones Industrial Average, which is calculated from about 30 "Blue Chip" stocks, (2) the Standard & Poors 500 Index, which is calculated from 500 stocks, (3) the AMEX Market Value Index, which tracks the average of stocks traded on the American Stock Exchange, and (4) the NASDAQ Composite Index, which tracks all of the stocks traded on the National Association Of Security Dealers exchange. The problem is that most indices are based upon historical assumptions and/or rules that cannot be guaranteed to apply realistically at any particular time.

As will be described in more detail below, the present invention relies upon measures that are more properly considered to be benchmarks than indices. The terms index and benchmark often are used somewhat interchangeably. However, strictly speaking a benchmark is commonly more of a reference within a localized process, while an index is more commonly viewed as a generally applicable statistical term. Webster's defines benchmark as "a standard or reference by which others can be measured or judged", and index as "a number derived from a series of observations and used as an indicator or measure". Statistics textbooks more specifically define an "index number" as "a single figure that shows how a whole set of related variables has changed over time or differs from place to place". The present description uses benchmark in its more

restricted sense to refer to a measure in the relatively restricted context of the present invention.

#### Portfolio/Fund Level Data

A critical element in the program of the present invention is publicly available portfolio data. There are at least two portfolio level fields of data (portfolio content and portfolio date) and two security level fields of data (CUSIPs or some other unique identifier and the number of shares for equities or par amounts for bonds). A CUSIP is a unique identifier. This data is generated from one or more of the following sources: Securities and Exchange Commission ("SEC") filings (these are referred to as "EDGAR filings") or the equivalent filings in other countries (i.e., in the case of those funds not registered in the United States). In the United States, all publicly traded funds are required to file at least semi-annual statements (i.e., one annual and one mid-year statement). Publicly traded funds issue annual, semi-annual and/or quarterly statements that provide a dated detailed list of securities comprising each portfolio/fund. Many mutual funds complexes, insurance companies, banks, etc. give detailed lists of the contents of their portfolios to various data providers. There are several data providers that compile security level data listings from both publicly and privately held portfolios/funds. Essentially these data providers use various combinations of the above sources to compile these listings.

### **Asset Class Data**

Depending on the benchmark being constructed, certain fields are matched with portfolio data. For example, certain equity portfolio data will require a description of the security, sector code (possibly based on the Standard Industrial Classification (SIC) code), etc. A high yield corporate bond portfolio might additionally require coupon, maturity, call schedule, etc. This general set of data is designed to completely encompass the portfolio data and is referred to as the Asset Class Data. Depending on the asset class(es) the securities are drawn from, there are typically several firms that provide this

type of data to those firms that manage the portfolios being benchmarked. Several brokerage firms (e.g., Merrill Lynch and Salomon/Smith Barney) as well as several firms unrelated to the brokerage and financial management industry provide this information (e.g., J.J. Kenny, which is owned by Standard and Poors, or EJV/Bridge).

## Portfolio Tracking Data

Related to the Portfolio Data is the Portfolio Tracking Data. These values are used to aid in tracking those portfolios that are used to construct the benchmarks and used to determine expenses charged to shareholders. This data is currently available from the following two primary sources: (1) Lipper provides portfolio level data (e.g., Net Asset Values ("NAVs"), returns, distribution yields, management fees, total expenses, defined asset groupings, etc.) for all publicly traded open-end funds, closed-end funds, annuity/insurance products, etc. Of particular importance are the NAVs and financial performance data. (2) Morningstar provides portfolio level data (e.g., Morningstar 3 year, 5 year, and 10 year ratings, management fees, total expenses, as well as defined asset groupings), which in many cases closely mimic those of Lipper.

## **Mutual Fund Performance**

Studies of current mutual fund performance suggest the following: (1) Investors chase returns, namely, the summation of dividend distributions and capital appreciation.

(2) Some fund returns can be slightly predictable. That is, past winners tend to continue to win and past losers tend to continue to lose. (3) The persistence in these funds is due almost exclusively to momentum stocks. In other words any persistent fund performance is due to holding stocks, not trading them in and out, as one would expect an "active" manager to do. Therefore, the appearance of superior "active" management is due to a

basic buy and hold strategy not active trading. (4) There appears to be less persistent skill in the mutual fund industry than one would expect. In short, the mutual fund industry's record often is not impressive. (5) Therefore, the costly professionals hired by mutual fund firms often are not warranted. See: "Cochrane, John H., New Facts in Finance", NBER Working Paper No. 7169, June 1999. P. 1-42.

### **SUMMARY OF THE INVENTION**

A primary object of the present invention is to provide mutual fund systems, processes and products that are characterized essentially by a program which can be represented by pseudo-code defining the following steps: (a) selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns by maintaining momentum during an existing first period of time of relatively long duration; (b) selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration; (c) establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and (d) tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio. Preferably, the first designated period of time is relatively extended, e.g. no less than two years, and the second designated period of time is relatively restricted, e.g., no more than two years. It is to be understood that each of the two periods of time extend backwardly from the same point of reference, one partially overlapping the other.

In the "normal" passive indexing approach, the benchmark/index is taken as a given (i.e., the benchmark is typically exogenous to the system). In some cases, a

manager determines the benchmark/index. In the present case, indexing is not merely an outcome of endogenous forces. Rather, it is determined by exogenous forces (e.g., different portfolio managers, rating services, data availability, etc.) as well. The program herein takes one or more real snapshots of one or more real portfolios, and then establishes a benchmark accordingly.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

For a fuller understanding of the nature and objects of the present invention, reference is made to the following detailed specification, which is to be taken with the accompanying drawings, wherein:

Fig. 1 is a flow diagram that generally illustrates the systems, processes and products of the present invention;

Figs. 2.1 to 2.2 are a composite listing of equity funds, ranked by estimated net inflows over a one year period, which constitute selections from an asset class that is identified in accordance with the illustrated example of the present invention;

Figs. 3.1 to 3.5 are a composite listing of fixed income funds ranked by estimated net inflows over a one year period, which constitute another asset class from which selections alternatively could be made in accordance with an alternative example of the present invention;

Figs. 4.1 to 4.2 illustrate a listing of the equity funds of Figs. 2.1 to 2.2, ranked by estimated net inflows over a one-year period (calendar year 1999);

Figs. 5.1 to 5.6 illustrate a Microsoft Excel spreadsheet for processing data in accordance with a step of the present invention;

Figs. 6.1 to 6.6 illustrate another Microsoft Excel spreadsheet for processing data in accordance with a next step of the present invention;

Figs. 7.1 to 7.8 illustrate a further Microsoft Excel spreadsheet for processing data in accordance with a next step of the present invention;

Figs. 8.1 to 8.7 illustrate still another Microsoft Excel spreadsheet for processing data in accordance with a next step of the present invention; and

Figs. 9.1 to 9.5 illustrate another Microsoft Excel spreadsheet for processing data in accordance with a next step of the present invention.

# DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT General Description – Fig. 1

A flow diagram illustrating the system, process and product of the present invention is shown in Fig. 1 as including the following steps:

Step 1 - as shown in blocks 20, 22, selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns by maintaining momentum during what may be defined as an existing first period of time of relatively long duration. (This first period extends backwardly from a specified reference point in time.) This selection identifies asset classes that are expected to outperform.

Step 2 - as shown in blocks 23, 24, selecting, from the aforementioned restricted number of asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during what may be defined as an existing second period of time of relatively short duration. (This second period extends backwardly from the specified reference point of time and partially overlaps the first period.)

**Step 3** - as shown in blocks 25, 26, establishing and optimizing (weighting and filtering) a benchmark based upon portfolios of assets 23, 24 to identify a moving portfolio having calculated momentum.

**Step 4** - as shown in blocks 28, 30, tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.

Pursuant to Steps 1 through 4, above, issuing securities, purchasing portfolio assets and selling securities as shown in blocks 32, 34, 36.

In support of the calculations herein, the following is to be noted: (1) portfolio data (i.e., CUSIPs or some other unique identifier and share amounts) must be available for each portfolio meeting the criteria of Steps 1 through 4; and (2) any fund/portfolio should have some unique identifier (e.g., a five character Nasdaq® symbol — National Association of Securities Dealers Automated Quotation System). The aforementioned unique identifiers are needed for confirming the identity of the fund/portfolios in order to process the various sets of data in a computer.

There now follow detailed descriptions of the steps of the present invention.

# Step 1 - Identify asset classes that are expected to outperform Fig. 1-blocks 20,22; Figs. 2.1-2.2, 3.1-3.5, 4.1-4.2

Figs. 2.1 to 2.2 are an example of a composite listing of equity funds, ranked by estimated net inflow over a one year period. Essentially, the most promising asset class will be that which has had the greatest net flows over the last year or more.

Figs. 3.1 to 3.5 are another example, in the form of a composite listing of fixed income funds, which constitute other asset classes from which selections alternatively could be made in accordance with another example of the present invention.

As of January, 2000, large cap growth equity funds have had the largest Total Net Assets ("TNA"), offer the largest 10 year Estimated Net Flows ("ENF"), and offer the largest one year Estimated Net Flows. Therefore, as of January 2000, large cap growth equity funds constitute a preferred universe from which the listing illustrated herein is selected.

Figs. 4.1 to 4.2 illustrate a listing of the equity asset groupings of Figs. 2.1 to 2.2, ranked by estimated net flows over the calendar year 1999. Given that this case is for illustration purposes, it should be noted that the one year period is for illustration purposes and could conceivably be significantly extended in practice.

# Step 2 - Identify the funds/portfolios that are expected to outperform Fig. 1-blocks 23,24

This step consists essentially of the following sub-steps:

Step 2.1 Perform regression analysis on all funds/portfolios in the selected asset class(es) in order to select those funds expected to outperform in the future. In this example, we take an equally weighted group of the 4 top funds/portfolios in the large-cap growth group.

Step 2.2 Update this analysis periodically, in this example once every three months, i.e., once a quarter. Drop and add funds based on this analysis. In this example, we apply an arbitrary rule based on a quarterly turnover of at most one fund/portfolio. Therefore, we drop the weakest of the four previous funds/portfolios and add the strongest fund/portfolio not included in the four

funds/portfolios comprising the benchmark. Thus, we target a 100% turnover per year. However, it is to be understood that there may be no turnover in any one or more quarters when all four top funds stay within the evaluation criteria.

**Step 2.3** As funds/portfolios are dropped and others added in their place, rebalancing will occur in order to maintain tracking with respect to the benchmark.

The regression methodology used in this example is largely based on the following financial economists:

Jensen (e.g., see Jensen, M., "The Performance of Mutual Funds in the Period 1945-1964," The Journal of Finance, Vol. XXIII, No. 2, May 1968, 389-419);

Hendricks, D., Patel, J., and R. Zeckhauser, "Hot Hands in Mutual Funds: Short-Run Persistence of Relative Performance, 1974-1988," The Journal of Finance, March 1993, 93-130;

Grinblatt, M., and S. Titman, "Portfolio Performance Evaluation: Old Issues and New Insights," The Review of Financial Studies, Vol. 2, No. 3, 1989, 393-421;

Grinblatt, M., and S. Titman, "Mutual Fund Performance: An Analysis of Quarterly Portfolio Holdings," Journal of Business, Vol. 62, No. 3, 1989, 393-416;

Grinblatt, M., and S. Titman, "The Persistence of Mutual Fund Performance," The Journal of Finance, Vol. XLVII, No. 5, December 1992, 1977-1984;

Grinblatt, M., and S. Titman, "Performance Measurement without Benchmarks: An Examination of Mutual Fund Returns," Journal of Business, Vol. 66, No. 1, 1993, 47-68;

Grinblatt, M., Titman, S., and R. Wermers, "Momentum Investment Strategies, Portfolio Performance, and Herding: A Study of Mutual Fund Behavior," The American Economic Review, Vol. 85, No. 5, December 1995, 1088-1105, etc.

The basic regression used here (and in most of the studies searching for mutual fund return persistence) is done to calculate some version of "Jensen's alpha". In this example, the following will be the form of the calculation (i.e., this is very standard): the "Jensen Measure is the intercept in a regression of the time series of excess returns (above the one month Treasury Bill rate) of the evaluated portfolio against the time series

of excess returns of the benchmark portfolio(s). This is the traditional measure used in most previous studies of fund performance." Grinblatt, M., and S. Titman, "A Study of Monthly Mutual Fund Returns and Performance Evaluation Techniques," Journal of Financial and Quantitative Analysis, Vol. 29, No. 3: September 1994, p. 423.

This regression calculation is as follows:

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RMF_{t}^{i}-RTB_{t}=\alpha^{i}+\beta^{i}(RAC_{t}-RTB_{t})+e_{t}^{i} , where RMF_{t}^{i}=\text{return for mutual fund i at time t (i.e., month t),} RTB_{t} = return for Treasury Bill at time t, \alpha^{i} = alpha of mutual fund i, \beta^{i} = beta (i.e., slope coefficient) for mutual fund i, RAC_{t} = return for mutual fund asset class at time t, and e_{t}^{i} = error term for mutual fund i at time t. Therefore, the estimated equation is of the form: \hat{\alpha}^{i}=(RMF^{i}-RTB)-[\hat{\beta}^{i}(RAC-RTB)] , where alpha and beta are estimates.
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Effectively, we are focusing on calculating rolling alphas for each fund in the large-cap growth asset class designation using 24 month intervals. Generally, we are dropping at least one data point and adding at least another every month (hence the reference to rolling regressions). The practical goal is to identify those individual funds

with the best recent risk-adjusted performance (i.e., over the last two years) under the assumption that some of that relative performance (i.e., relative to other funds in its asset class) will persist into the near future. The literature in this field suggests that two years is a good period of time to use (i.e., three or more may be too long), and that some version of Jensen's alpha is useful in identifying future performers (especially for certain asset classes like growth equities).

# Step 3 - Establish and Optimize (Weight and Filter) Fig. 1-blocks 25, 26

This step involves consolidating the investments contained by the selection of Step 2 to provide a composite list of current investments; filtering the composite list to provide a preliminary moving portfolio of investments; and filtering the preliminary moving portfolio of investments to provide an enhanced moving portfolio of investments.

Each of the securities in the selection of current portfolios has a unique CUSIP identifier. For each of the securities, the CUSIP and the shares data are combined with pricing data. For each of the current portfolios the estimated total market value is calculated as follows:

(1) For each of the securities in the selected portfolio/funds, combine the CUSIP and shares data with pricing data in order to calculate market value weightings. In addition to price, add other fields such as CUSIP, transaction costs, liquidity, description, and industry sector. In short, combine the portfolio data with the asset class data for that specific benchmark. Also, for each portfolio/fund, consolidate any securities with duplicate identifiers (i.e. CUSIPS) by summing up the market value for that identifier.

(2) For each portfolio/fund in the benchmark, calculate the estimated total market value for that portfolio as follows:

$$PMV = \sum_{i=1}^{N} Shares_i * Price_i$$

- , where N = the number of securities in that portfolio/fund, and PMV = the portfolio/fund market value;
  - (3) Sum up all the PMVs (i.e.,

$$TBMV = \sum_{j=1}^{J} PMV^{j}$$

- , where J = the number of portfolios/funds in the benchmark (in this case 4), and TBMV = total benchmark market value);
- (4) Create a scaling factor in order to equally weight the portfolios by taking the reciprocal of the weight of each portfolio as follows:

$$SF^{-j} = 1 / (PMV^{-j} / TBMV^{-})$$
 where

$$SF^{j}$$

- = the scaling factor for the jth portfolio/fund.
  - (5) adjust the scaling factor so that the sum of the scaling factors equal unity,

$$ASF^{j} = SF^{j} / \sum_{j=1}^{J} SF^{j}$$

- , where
- = the adjusted scaling factor for the jth portfolio/fund, and  $ASF^{j}$

. (6) Adjust the securities in the benchmark so that each portfolio/fund receives an equal weight (as opposed to each security) by multiplying each security in each portfolio/fund by its appropriate adjusted scaling factor,

$$AMV_i^j = MV_i^j * ASF^j$$

, where

 $AMV_i^j$ 

- = the adjusted market value of security i in portfolio/fund j; and
- (7) Based on step 6, create an adjusted weight for each security in each portfolio/fund in the benchmark,

$$x_i^j = AMV_i^j / (\sum_{i=1}^{J} \sum_{j=1}^{N} AMV_i^j * J)$$

, where

 $\mathbf{x}^{j}$ 

= the weight of the ith security in the jth portfolio/fund, and

$$\sum_{i=1}^{j} \sum_{i=1}^{N} x_i^j = 1/J$$

(by construction).

The final filters include the following: (a) each security must be listed on a major domestic or overseas stock quotation system; (b) each security must have been traded for at least 1 year; (c) each security must have an annualized share turnover rate exceeding 20% of the common shares outstanding; (d) over 50% of the total common shares of a company's stock must not be owned by insiders; (e) transaction costs are minimized. subject to movement with the underlying theoretical benchmark.

The arrangement is such that filter (a) requires that the securities be traded on a large recognized stock exchange; filter (b) establishes some base minimum seasoning for

shares; filter (c) establishes some base level of demonstrated liquidity over the last year; filter (d) merely diminishes the odds that the shares of any company held in the portfolio are unduly influenced by insiders, and works as an extra liquidity filter; and filter (e) is an explicit attempt to enhance the returns of the portfolio by minimizing transaction costs subject to the constraint of requiring that the resulting portfolio reflect the original portfolio's financial characteristics.

The following is the formulation for the optimization used in filter (e):

$$TC = \sum_{i=1}^{N} TC_i * x_i$$

Minimize

, where TC = transaction costs (these are based on bid/ask spreads). In a typical portfolio/fund example, N = 519 (i.e., 566 minus the 47 dropped in the first 4 filters).

$$\beta^{US} \leq 1.01$$

$$\beta^{US} \geq 0.99$$

Subject to, where

$$\beta^{US}$$

= the beta of the portfolio/fund example. Also, by definition

$$\sum_{i}^{N} \beta_{i} * x_{i} = 1 = \beta$$

where N=519 and  $\beta=$  the beta of the portfolio before the optimization (i.e., the sensitivity of the portfolio/fund to movements in the benchmark ). Therefore, by definition,  $\beta=1$ .

βs are estimated for each of the securities in any selection by the following regression analysis:

$$R_{it} = \alpha_i + \beta_i * R_t^{US} + e_{it}$$

, where R = return, i denotes for security i of the number of securities in said selection, t denotes day t of one year of daily values, and  $\alpha$  = alpha of the regression, both  $\alpha$  and  $\beta$  being estimated by regressing approximately 200 daily returns for the security against the market weighted returns for the portfolio/fund of said selection of securities.

# Step 4 - Tracking and Periodically Updating Fig. 1- blocks 28, 30

The moving portfolio is repetitively updated in accordance with Steps 1, 2 and 3.

#### **EXAMPLE**

A specific example, illustrating the system, process and product of the present invention, is given below in reference to the Microsoft Excel spreadsheets depicted in Figs. 5.1-5.6, 6.1-6.6, 7.1-7.8, 8.1-8.7 and 9.1-9.6. These spreadsheets perform calculations, which generate a running list of funds that are included in a benchmark for a large-cap growth equity momentum shares portfolio during a time span that includes the period from 1/31/1997 to 3/31/2000.

## The Spreadsheet of Figs. 5.1 - 5.6

This is the "rawdata" spreadsheet, i.e., returns, expenses, and fund identifiers. There are no calculations and/or filtering at this stage. This spreadsheet draws data from Lipper with some fund identifier and monthly total returns for each fund in the large-cap growth equity group going back to 1/31/95 (i.e., through 3/31/2000). In addition, it

matches this file with 1 month Treasury Bill return data from the Federal Reserve Board's H.15 release. (There are many other potential sources.)

# The Spreadsheet of Figs. 6.1 - 6.6

Next comes the filtering to reduce the sample to the set from which final selections are made. In addition, an average monthly return is calculated across the 122 funds that survived the filters. This spreadsheet filters the fund level data as follows: (1) cuts the period from 12/31/1989 through 3/31/2000 to 1/31/1995 through 3/31/2000; (2) eliminates all funds without full return data during the period 1/31/95 through 3/31/2000; and (3) eliminates all duplicate fund data while keeping those funds with the lowest stated total expenses.

### The Spreadsheet of Figs. 7.1 - 7.8

This spreadsheet nets out the "risk-free rate" from individual and average fund returns. It calculates returns net of "risk-free rate". Of the original funds, 122 remain after applying the initial filters mentioned. Therefore, the universe of funds is this list of 122 large-cap growth equity funds. This netting of the "risk-free rate" also is applied to the average return for the 122 funds. Reference is made to the above regression equations to explain the processing of both the individual funds monthly returns and their average or median monthly returns.

# The Spreadsheet of Figs. 8.1 - Fig. 8.7

This spreadsheet calculates the rolling alphas, which are the basis for fund inclusion/exclusion in the benchmark. It calculates rolling 2 year (i.e., 24 month) alphas over the period 12/31/1996 through 3/31/2000. This is done for all 122 funds. These

alphas form the basis by which funds are included and/or dropped from the benchmark every time the benchmark is updated (in this case quarterly).

### The Spreadsheet of Figs. 9.1 - 9.5

This spreadsheet tracks the funds comprising the benchmark. Essentially, it summarizes the combination of the alphas derived in the previous spreadsheet and the rules of fund selection discussed in the first part of this document. Funds must be large-cap growth equity funds as defined by Lipper. The benchmark comprises four of these funds. Each calendar quarter one or none of these funds will be dropped and replaced by that fund with the best-estimated alpha (i.e., outside of the top three current funds included in the benchmark). This spreadsheet displays the rolling selected funds (in this example 4 funds are always maintained in the benchmark — equally weighted) as they would appear chronologically to implement the strategy of the present invention. For example, given the lag involved with the data, the data for 1/31/1997 is based on the known 12/31/1996 data.

## Rebalancing the Benchmark

Rebalancing involves repeating the foregoing steps periodically. In this example, after the initial four funds are selected, typically only one will need to be changed each quarter. Although, as can be seen from the 2<sup>nd</sup> and 3<sup>rd</sup> to last quarterly updates in this example, there is no change required because the same four are still rated in the top four by this method.

#### **OPERATION**

The operation of the present mutual fund systems, processes and products involves: selecting a restricted number of asset classes/groups that have demonstrated

superior returns by maintaining momentum during an existing first period of time of relatively long duration; selecting portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration; establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio. The practical value of the aforementioned systems, processes and products is demonstrated by the following. The aforementioned spreadsheet example added about 14% incremental risk-adjusted return per year. The geometric average annual return for this example was 47.30% per year (over the 39 month period analyzed – 1/31/1997 through 3/31/2000) versus 33.45% for the average fund (i.e., for the 122 fund universe). The aforementioned example focuses on large-cap growth equities. But this approach is applicable within and across many other asset classes/groups.

### WHAT IS CLAIMED IS:

- 1. A financial system comprising:
- (a) means for selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns by maintaining momentum during an existing first period of time of relatively long duration;
- (b) means for selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) means for establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) means for tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- 2. The financial system of claim 1 wherein said first designated period of time is at least two years and said second designated period of time is at most two years.
  - 3. A financial process comprising the steps of:
- (a) selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns by maintaining momentum during an existing first period of time of relatively long duration;
- (b) selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and

- (d) tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- 4. The financial process of claim 3 wherein said first designated period of time is at least two years and said second designated period of time is at most two years.
  - 5. A financial system comprising:
- (a) means for selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior asset flows by maintaining momentum during an existing first period of time of relatively long duration;
- (b) means for selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) means for establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) means for tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- (e) said second mentioned means for selecting operating in accordance with the following regression:

```
RMF_t^i - RTB_t = \alpha^i + \beta^i (RAC_t - RTB_t) + e_t^i, where RMF_t^i = \text{return for portfolio or mutual fund i at time t (i.e., month t)},
```

= return for specified asset at time t,

```
\alpha^i = alpha of mutual fund i, \beta^i = beta (i.e., slope coefficient) for mutual fund i, RAC_t = return for mutual fund asset class at time t, and e_t^i = error term for mutual fund i at time t. Therefore, the estimated equation is of the form: \hat{\alpha}^i = (RMF^i - RTB) - [\hat{\beta}^i(RAC - RTB)], where alpha and beta are estimates.
```

- 6. The financial system of claim 5 wherein said first designated period of time is at least two years and said second designated period of time is at most two years.
  - 7. A financial process comprising the steps of:
- (a) selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns and/or asset flows by maintaining momentum during an existing first period of time of relatively long duration;
- (b) selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- (e) said second mentioned step of selecting being performed in accordance with the following regression:

$$RMF_{t}^{i} - RTB_{t} = \alpha^{i} + \beta^{i}(RAC_{t} - RTB_{t}) + e_{t}^{i}$$

```
, where
```

```
RMF_{i}^{i}
= return for mutual fund i at time t (i.e., month t), RTB_{i}
= return for Treasury Bill at time t, \alpha^{i}
= alpha of mutual fund i, \beta^{i}
= beta (i.e., slope coefficient) for mutual fund i, RAC_{i}
= return for mutual fund asset class at time t, and e_{i}^{i}
= error term for mutual fund i at time t.

the estimated equation being of the form:
\hat{\alpha}^{i} = (RMF^{i} - RTB) - [\hat{\beta}^{i}(RAC - RTB)]
, where alpha and beta are estimates.
```

- 8. The financial process of claim 7 wherein said first designated period of time is at least two years and said second designated period of time is at most two years.
  - 9. A financial system comprising:
- (a) means for selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns and/or asset flows by maintaining momentum during an existing first period of time of relatively long duration;
- (b) means for selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;

- (c) means for establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) means for tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- (e) said second mentioned means for selecting operating in accordance with the following regression:

```
RMF_t^i - RTB_t = \alpha^i + \beta^i (RAC_t - RTB_t) + e_t^i, where

RMF_t^i
= return for mutual fund i at time t (i.e., month t),

RTB_t
= return for specified asset at time t,

\alpha^i
= alpha of mutual fund i,

\beta^i
= beta (i.e., slope coefficient) for mutual fund i,

RAC_t
= return for mutual fund asset class at time t, and

e_t^i
= error term for mutual fund i at time t, the estimated equation being in the form:

\hat{\alpha}^i = (RMF^i - RTB) - [\hat{\beta}^i (RAC - RTB)]
, where alpha and beta are estimates.
```

- 10. The financial system of claim 9 wherein said first designated period of time is at least two years and said second designated period of time is at most two years.
  - 11. A financial process comprising the steps of:

- (a) selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns and/or asset flows by maintaining momentum during an existing first period of time of relatively long duration;
- (b) selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- (e) said second mentioned selecting operating in accordance with the following regression:

```
RMF_t^i - RTB_t = \alpha^i + \beta^i (RAC_t - RTB_t) + e_t^i, where

RMF_t^i
= return for mutual fund i at time t (i.e., month t),

RTB_t
= return for specified asset at time t,

\alpha^i
= alpha of mutual fund i,

\beta^i
= beta (i.e., slope coefficient) for mutual fund i,

RAC_t
= return for mutual fund asset class at time t, and

e_t^i
= error term for mutual fund i at time t, the estimated equation being in the form:

\hat{\alpha}^i = (RMF^i - RTB) - [\hat{\beta}^i (RAC - RTB)]
```

, where alpha and beta are estimates.

- 12. The financial process of claim 11 wherein said first designated period of time is at least two years and said second designated period of time is at most two years.
  - 13. A financial system comprising:
- (a) means for selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns and/or asset flows by maintaining momentum during an existing first period of time of relatively long duration;
- (b) means for selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) means for establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) means for tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- (e) said second mentioned means for selecting operating in accordance with the following regression:

```
RMF_{t}^{i} - RTB_{t} = \alpha^{i} + \beta^{i}(RAC_{t} - RTB_{t}) + e_{t}^{i}, where

RMF_{t}^{i}
= return for mutual fund i at time t (i.e., month t),

RTB_{t}
= return for Treasury Bill at time t,

\alpha^{i}
= alpha of mutual fund i,

\beta^{i}
= beta (i.e., slope coefficient) for mutual fund i,

RAC_{t}
```

= return for mutual fund asset class at time t, and  $e_i^i$  = error term for mutual fund i at time t, the estimated equation being in the form:  $\hat{\alpha}^i = (RMF^i - RTB) - [\hat{\beta}^i (RAC - RTB)]$ , where alpha and beta are estimates.

- (f) said means for establishing and optimizing operating in accordance with the following:
- (1) for each of the securities in the selected portfolio/funds, combine the unique identifier and shares data with pricing data in order to calculate market value weightings. In addition to price, add other fields such as CUSIP, transaction costs, liquidity, description, and industry sector. In short, combine the portfolio data with the asset class data for that specific benchmark. Also, for each portfolio/fund, consolidate any securities with duplicate identifiers (i.e. CUSIPS) by summing up the market value for that identifier.
- (2) for each portfolio/fund in the benchmark, calculate the estimated total market value for that portfolio as follows:

$$PMV = \sum_{i=1}^{N} Shares_{i} * Price_{i}$$

, where N = the number of securities in that portfolio/fund, and PMV = the portfolio/fund market value;

(3) Sum up all the PMVs

$$TBMV = \sum_{j=1}^{J} PMV^{j}$$

\* ( ) (

- , where J = the number of portfolios/funds in the benchmark (in this case 4), and TBMV = total benchmark market value);
- (4) create a scaling factor in order to equally weight the portfolios by taking the reciprocal of the weight of each portfolio as follows:

$$SF^{-j} = 1 / (PMV^{-j} / TBMV^{-})$$
 where

 $SF^{j}$ 

- = the scaling factor for the jth portfolio/fund.
  - (5) adjust the scaling factor so that the sum of the scaling factors equal unity,

$$ASF^{j} = SF^{j} / \sum_{j=1}^{J} SF^{j}$$

, where

 $ASF^{j}$ 

= the adjusted scaling factor for the jth portfolio/fund, and

$$\sum_{j=1}^{J} ASF^{j} = 1$$

. (6) adjust the securities in the benchmark so that each portfolio/fund receives an equal weight (as opposed to each security) by multiplying each security in each portfolio/fund by its appropriate adjusted scaling factor,

$$AMV_i^j = MV_i^j * ASF^j$$

, where

 $AMV_i^j$ 

= the adjusted market value of security i in portfolio/fund j; and

(7) based on step (6), create an adjusted weight for each security in each portfolio/fund in the benchmark,

$$x_i^j = AMV_i^j / (\sum_{i=1}^j \sum_{i=1}^N AMV_i^j * J)$$

, where

 $x_i^j$ 

= the weight of the ith security in the jth portfolio/fund, and

$$\sum_{i=1}^{j} \sum_{i=1}^{N} x_i^{j} = 1/J$$

(by construction).

- 14. A financial process comprising the steps of:
- (a) selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns and/or asset flows by maintaining momentum during an existing first period of time of relatively long duration;
- (b) selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.
- (e) said second mentioned step of selecting operating in accordance with the following regression:

$$RMF_t^i - RTB_t = \alpha^i + \beta^i (RAC_t - RTB_t) + e_t^i$$

```
, where RMF_t^i = \text{return for mutual fund i at time t (i.e., month t)}, RTB_t = \text{return for specified asset at time t,} \alpha^i = \text{alpha of mutual fund i,} \beta^i = \text{beta (i.e., slope coefficient) for mutual fund i,} RAC_t = \text{return for mutual fund asset class at time t, and} e_t^i = \text{error term for mutual fund i at time t, the estimated equation being in the form:} \hat{\alpha}^i = (RMF^i - RTB) - [\hat{\beta}^i (RAC - RTB)] , where alpha and beta are estimates.
```

- (f) said establishing and optimizing operating in accordance with the following:
- (1) for each of the securities in the selected portfolio/funds, combine the unique identifier and shares data with pricing data in order to calculate market value weightings. In addition to price, add other fields such as CUSIP, transaction costs, liquidity, description, and industry sector. In short, combine the portfolio data with the asset class data for that specific benchmark. Also, for each portfolio/fund, consolidate any securities with duplicate identifiers (i.e. CUSIPS) by summing up the market value for that identifier.
- (2) for each portfolio/fund in the benchmark, calculate the estimated total market value for that portfolio as follows:

$$PMV = \sum_{i=1}^{N} Shares_i * Price_i$$

- , where N = the number of securities in that portfolio/fund, and PMV = the portfolio/fund market value;
  - (3) Sum up all the PMVs (i.e.,

$$TBMV = \sum_{j=1}^{J} PMV^{j}$$

- , where J = the number of portfolios/funds in the benchmark (in this case 4), and TBMV = total benchmark market value);
- (4) create a scaling factor in order to equally weight the portfolios by taking the reciprocal of the weight of each portfolio as follows:

$$SF^{-j} = 1 / (PMV^{-j} / TBMV^{-})$$
 where

 $SF^{j}$ 

- = the scaling factor for the jth portfolio/fund.
  - (5) adjust the scaling factor so that the sum of the scaling factors equal unity,

$$ASF^{j} = SF^{j} / \sum_{j=1}^{J} SF^{j}$$

, where

ASF <sup>i</sup>

= the adjusted scaling factor for the jth portfolio/fund, and

$$\sum_{i=1}^{J} ASF^{i} = 1$$

1, 1 1 1

- (b) selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time of relatively short duration;
- (c) establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum, and
- (d) tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio;
- (e) said second mentioned step for selecting operating in accordance with the following regression:

```
RMF_t^i - RTB_t = \alpha^i + \beta^i (RAC_t - RTB_t) + e_t^i, where

RMF_t^i
= return for mutual fund i at time t (i.e., month t),

RTB_t
= return for Treasury Bill at time t,

\alpha^i
= alpha of mutual fund i,

\beta^i
= beta (i.e., slope coefficient) for mutual fund i,

RAC_t
= return for mutual fund asset class at time t, and

e_t^i
= error term for mutual fund i at time t, the estimated equation being in the form:

\hat{\alpha}^i = (RMF^i - RTB) - [\hat{\beta}^i (RAC - RTB)]
, where alpha and beta are estimates;
```

- (f) said establishing and optimizing operating in accordance with the following:
- (1) for each of the securities in the selected portfolio/funds, combine unique identifier and shares data with pricing data in order to calculate market value weightings;

in addition to price, add other fields such as CUSIP, transaction costs, liquidity, description, and industry sector. In short, combine the portfolio data with the asset class data for that specific benchmark; also, for each portfolio/fund, consolidate any securities with duplicate identifiers (i.e. CUSIPS) by summing up the market value for that identifier.

(2) for each portfolio/fund in the benchmark, calculate the estimated total market value for that portfolio as follows:

$$PMV = \sum_{i=1}^{N} Shares_i * Price_i$$

- , where N = the number of securities in that portfolio/fund, and PMV = the portfolio/fund market value;
  - (3) Sum up all the PMVs (i.e.,

$$TBMV = \sum_{j=1}^{J} PMV^{j}$$

- , where J = the number of portfolios/funds in the benchmark (in this case 4), and TBMV = total benchmark market value);
- (4) create a scaling factor in order to equally weight the portfolios by taking the reciprocal of the weight of each portfolio as follows:

$$SF^{-j} = 1/(PMV^{-j}/TBMV)$$
 where

 $SF^{j}$ 

- = the scaling factor for the jth portfolio/fund.
  - (5) adjust the scaling factor so that the sum of the scaling factors equal unity,

$$ASF^{j} = SF^{j} / \sum_{j=1}^{J} SF^{j}$$

, where

 $ASF^{j}$ 

= the adjusted scaling factor for the jth portfolio/fund, and

$$\sum_{i=1}^{J} ASF^{j} = 1$$

. (6) adjust the securities in the benchmark so that each portfolio/fund receives an equal weight (as opposed to each security) by multiplying each security in each portfolio/fund by its appropriate adjusted scaling factor,

$$AMV_{i}^{j} = MV_{i}^{j} * ASF^{j}$$

, where

 $AMV_i^j$ 

- = the adjusted market value of security i in portfolio/fund j; and
- (7) based on step (6), create an adjusted weight for each security in each portfolio/fund in the benchmark,

$$x_i^j = AMV_i^j / (\sum_{i=1}^j \sum_{i=1}^N AMV_i^j * J)$$

, where

 $x_i^j$ 

= the weight of the ith security in the jth portfolio/fund, and

$$\sum_{i=1}^{J} \sum_{i=1}^{N} x_i^{j} = 1/J$$
 (by construction).

## **ABSTRACT**

The disclosed mutual fund systems, processes and products involve: selecting, from the universe of asset classes, a restricted number of asset classes that have demonstrated superior returns by maintaining momentum during an existing first period of time, say at least two years; selecting, from these asset classes, portfolios of assets that have demonstrated superior returns by maintaining momentum during an existing second period of time, say at most two years; establishing and optimizing a benchmark based upon these portfolios of assets to identify a moving portfolio having calculated momentum; and tracking and periodically updating investment decisions to monitor and maintain the calculated momentum of the moving portfolio.

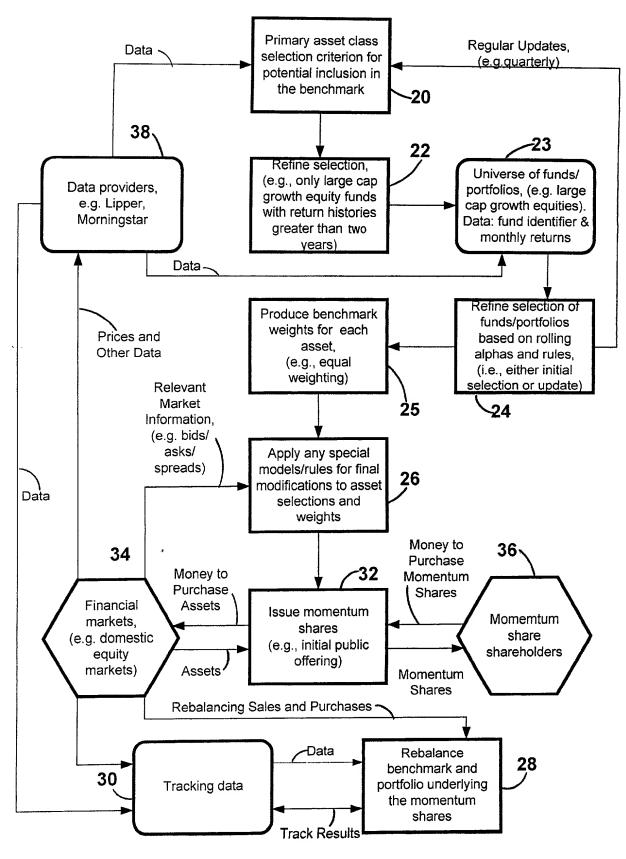


Fig. 1

Equity Funds	Assets (Mil. \$)	Rank	Estimated Net Flow (Mil. \$)	Rank	Estimated Net Flow (Mil. \$) 01/31/1990 12/31/1999 10 years	Rank
Large-Cap Growth Funds	\$507,552	1	\$74,290	1	\$150,014	1
Multi-Cap Growth Funds	\$505,773	2		2	\$113,772	2
Science & Technology Funds	\$168,385	9	\$34,645	3		10
S&P 500 Funds	\$228,509	6		4	\$107,208	4
Large-Cap Core Funds	\$362,813	3		5	\$71,334	6
Multi-Cap Core Funds	\$172,192	8		6	\$59,230	7
Small-Cap Growth Funds	\$79,166	14		7	\$21,928	12
Global Funds	\$172,441	7		8	\$48,396	8
Mid-Cap Growth Funds	\$121,106	12	\$3,865	9	\$19,536	14
Japanese Funds	\$8,467	32	\$3,035	10	\$4,322	29
Telecommunication Funds	\$12,455	28	\$2,610	11	\$3,413	31
Pacific Region Funds	\$8,591	31	\$1,993	12	\$4,930	27
Large-Cap Value Funds	\$349,444	4	\$1,779	13	\$107,304	3
Health/Biotechnology Funds	\$39,650	18	\$1,346	14	\$8,065	20
International Small-Cap Funds	\$14,999	27	\$995	15	\$4,918	28
International Funds	\$258,999	5	\$775	16	\$93,631	5
Balanced Funds	\$168,166	10	\$591	17	\$48,360	9
Specialty Diversified Equity Funds	\$1,905	38	\$331	18	\$943	35
Canadian Funds	\$83	42	(\$12)	19	(\$28)	39
Pacific Ex Japan Funds	\$5,703	34	(\$16)	20	\$2,984	32
China Region Funds	\$876	40	(\$84)	21	(\$58)	40
Gold Oriented Funds	\$1,805	39	(\$96)	22	\$824	36
Sector/Miscellaneous Funds	\$3,126	36	(\$100)	23	\$1,004	34
Balanced Target Maturity Funds	\$860	41	(\$171)	24	(\$615)	41
Latin American Funds	\$2,145	37	(\$306)	25	\$1,472	33
Natural Resources Funds	\$4,379	35	(\$321)	26	\$599	37
Emerging Markets Funds	\$23,226	25	(\$413)	27	\$16,345	17
Convertible Securities Funds	\$8,807	30	(\$1,008)	28	\$444	38
Utility Funds_	\$25,740	24	(\$1,215)	29	(\$4,623)	42
Real Estate Funds	\$7,521	33	(\$1,242)	30	\$6,150	23
Small-Cap Core Funds	\$37,572	20	(\$1,854)	31	\$11,681	18
Mid-Cap Core Funds	\$52,320	16	(\$1,974)	32	\$8,984	19
European Region Funds	\$26,820	22	(\$2,479)	33	\$6,308	22

Fig. 2.1

Global Small-Cap Funds	\$26,634	23	(\$3,041)	34	\$3,639	30
Mid-Cap Value Funds	\$32,018	21	(\$3,480)	35	\$5,470	25
Flexible Portfolio Funds	\$66,668	15	(\$3,720)	36	\$18,459	15
Global Flexible Port Funds	\$22,766	26	(\$5,178)	37	\$5,721	24
Income Funds	\$39,864	17	(\$5,427)	38	\$6,484	21
Financial Services Funds	\$11,167	29	(\$5,713)	39	\$5,050	26
Small-Cap Value Funds	\$39,029	19	(\$8,795)	40	\$17,245	16
Equity Income Funds	\$98,870	13	(\$14,610)	41	\$22,922	11
Multi-Cap Value Funds	\$163,174	11	(\$33,600)	42	\$19,915	13
Total	\$3,881,782		\$139,899		\$1,069,681	

Fig. 2.2

## Total Net Rank Estimated Rank Estimated Rank

Assets (Mil. \$)			Net Flow (Mil. \$)		Net Flow (Mil. \$)		
					01/31/1990 12/31/1999		
Fixed Income Funds			1 year		10 years		
Insti Money Market Funds	\$370,160	2	\$91,691	1	\$206,337	2	
Money Market Funds	\$725,465	1	\$84,929	2	\$341,751	1	
Intermediate Investment Grade Debt Funds	\$77,708	8	\$9,555	3	\$45,840	3	
InstI U.S. Government Money Market Funds	\$79,651	6	\$6,139	4	\$22,802	9	
Tax-Exempt Money Market Funds	\$92,327	5	\$3,793	5	\$25,242	7	
California Tax-Exempt Money Market Funds	\$33,156	14	\$3,589	6	\$16,501	10	
Intermediate U.S. Government Funds	\$28,135	16	\$2,792	7	\$10,313	12	
U.S. Treasury Money Market Funds	\$57,724	10	\$2,356	8	\$23,492	8	
U.S. Government Money Market Funds	\$77,963	7	\$2,319	9	\$29,424	6	

Fig. 3.1

New York Tax-Exempt Money	\$18,178	23	\$1,454	10	\$8,417	15
Market Funds						
Short Investment Grade Debt Funds	\$22,619	21	\$1,232	11	\$3,803	20
Massachusetts Tax-Exempt Money Market Fd	\$5,090	39	\$693	12	\$3,005	23
Sh-Intmdt U.S. Government Funds	\$11,322	27	\$599	13	\$304	51
Target Maturity Funds	\$2,004	64	\$553	14	\$845	40
Short U.S. Government Funds	\$9,071	30	\$529	15	(\$413)	79
Other States Tax-Exempt	\$5,842	35	\$497	16	\$6,228	17
Money Market Fds	Ψ0,0 12	00	Ψ107		Ψ0,220	,,,
California Intermdt Municipal Debt Funds	\$3,494	51	\$345	17	\$2,227	26
Intermediate Municipal Debt	\$27,336	18	\$336	18	\$9,112	13
Funds	Ψ27,000	10	ΨΟΟΟ		Ψ0,112	
New Jersey Tax-Exempt	\$5,573	36	\$261	19	\$1,666	31
Money Market Funds						
Short Municipal Debt Funds	\$7,425	32	\$176	20	\$2,469	25
Ohio Tax-Exempt Money	\$3,629	50	\$86	21	\$1,801	30
Market Funds						
Massachusetts Intermediate	\$517	84	\$75	22	\$264	54
Muni Debt Fds						
Hawaii Municipal Debt Funds	\$1,354	72	\$74	23	\$176	59
Other States Sh-Intmdt Muni	\$1,498	69	\$68	24	\$1,147	36
Debt Fds						
Pennsylvania Tax-Exempt	\$4,587	42	\$25	25	\$2,136	27
Money Market Fds						
Georgia Municipal Debt Funds	\$951	76	\$13	26	\$301	52
New York Insured Municipal	\$2,218	60	\$8	27	\$567	46
Debt Funds			•		0050	07
Florida Insured Municipal Debt	\$1,198	73	\$1	28	\$953	37
Funds	A 4=		(040)	00	(0.4)	00
Washington Municipal Debt	\$47	89	(\$10)	29	(\$4)	68
Funds	<b>#70</b> 5	70	(044)	20	6252	48
Tennessee Municipal Debt	\$765	78	(\$11)	30	\$352	40
Funds	¢740	70	(¢12\	31	\$63	66
South Carolina Municipal Debt Funds	\$716	79	(\$12)	31	φυσ	UU

Fig. 3.2

Louisiana Municipal Debt	\$434	86	(\$12)	32	\$69	65
Funds						
Virginia Municipal Debt Funds	\$2,426	57	(\$14)	33	\$886	38
Kansas Municipal Debt Funds	\$401	87	(\$16)	34	\$295	53
Virginia Intermediate Muni	\$594	81	(\$23)	35	\$141	62
Debt Fds	-		` _ `			
Ultra-Short Obligations Funds	\$6,383	33	(\$29)	36	\$2,812	24
Missouri Municipal Debt Funds	\$995	75	(\$32)	37	\$237	57
Pennsylvania Municipal Debt	\$7,502	31	(\$32)	38	\$1,207	35
Funds	Ψ,,σσ=	•	(+/		<b>+ · ,</b> —- ·	
Sh-Intmdt Municipal Debt	\$6,102	34	(\$34)	39	\$1,348	34
Funds	<b>4</b> 0,.0 <b>-</b>	•	(+)			
Alabama Municipal Debt Funds	\$443	85	(\$37)	40	(\$8)	69
California Sh-Intmdt Municipal	\$568	82	(\$38)	41	\$320	50
	ΨΟΟΟ	02	(400)	• •	40	
Debt Fds	\$872	77	(\$41)	42	\$246	56
Florida Intermediate Municipal	Ψ012	11	(4-11)		<b>4</b> =.0	•
Debt Fds	\$344	88	(\$48)	43	(\$141)	72
Texas Municipal Debt Funds	\$655	80	(\$ <del>4</del> 9)	44	\$249	55
Ohio Intermediate Municipal	ანეე	ου	( <del>45)</del>		ΨΕ-ΤΟ	00
Debt Fds	<b>#0.070</b>	54	(\$54)	45	\$846	39
Connecticut Tax-Exempt	\$2,878	54	(404)	40	Ψ0+0	55
Money Market Fds	04.404	74	(\$63)	46	\$145	61
Colorado Municipal Debt	\$1,131	74	(\$05)	40	ΨΙΤΟ	٠.
Funds	<b>60.040</b>	59	(\$66)	47	\$207	58
Maryland Municipal Debt	\$2,348	29	(400)	71	ΨΖΟΙ	00
Funds	64.005	71	(\$73)	48	\$130	64
Kentucky Municipal Debt	\$1,395	7.1	(4/3)	40	Ψ100	0-1
Funds	<b>64.000</b>	41	(\$77)	49	\$3,133	22
General Bond Funds	\$4,800		(\$77) (\$87)	<del>49</del> 50	\$3,133	49
North Carolina Municipal Debt	\$2,074	62	(401)	50	<b>\$520</b>	70
Funds	*		/ <b>#00</b> \	51	(\$212)	77
Pennsylvania Intermediate	\$526	83	(\$88)	51	(\$Z 1Z)	• • •
Muni Debt Fds	04.405	40	(804)	52	(\$376)	78
Massachusetts Municipal Debt	\$4,185	43	(\$94)	52	(4370)	70
Funds	04 455	70	(404)	53	\$4	67
Oregon Municipal Debt Funds	\$1,455	70	(\$94)	53 54	\$501	47
Other States Municipal Debt	\$1,793	65	(\$95)	54	φ <b>υ</b> υ (	71
Funds	#0.050	45	(000)	EE	\$578	45
California Insured Municipal	\$3,998	45	(\$96)	55	φυισ	70
Debt Funds						

Fig. 3.3

Michigan Tax-Exempt Money Market Funds	\$1,551	67	(\$120)	56	\$660	42
Arizona Municipal Debt Funds	\$2,037	62	(\$400)		(007)	
Connecticut Municipal Debt		63	(\$120)	57	(\$87)	71
Funds	\$1,719	66	(\$140)	58	(\$175)	74
Intermediate U.S. Treasury	\$3,826	47	(\$166)	59	\$1,803	29
Funds	Ψ0,020	71	(\$100)	39	Φ1,003	29
International Income Funds	\$5,404	38	(\$176)	60	\$1,575	32
General U.S. Treasury Funds	\$2,738	56	(\$181)	61	(\$39)	70
Minnesota Municipal Debt	\$2,860	55		62		
Funds	<b>Φ</b> 2,000	55	(\$206)	62	(\$146)	73
Corporate Debt Funds BBB-	\$23,624	19	(\$211)	63	\$8,914	14
Rated			,			
New Jersey Municipal Debt	\$5,017	40	(\$212)	64	\$130	63
Funds						
New York Intermdt Municipal	\$2,118	61	(\$214)	65	\$657	43
Debt Funds			,			
Emerging Markets Debt Funds	\$3,672	49	(\$230)	66	\$1,810	28
Ohio Municipal Debt Funds	\$3,762	48	(\$241)	67	(\$182)	75
Short World Multi-Market	\$1,517	68	(\$260)	68	(\$5,965)	82
Income Funds			(, ,		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Inst! Tax-Exempt Money	\$36,159	13	(\$285)	69	\$8,269	16
Market Funds						
Michigan Municipal Debt Funds	\$3,237	52	(\$325)	70	(\$209)	76
Sh-Intmdt Investment Grade	\$13,504	25	(\$356)	71	\$3,761	21
Debt Funds	<b>V.O</b> 100.		(4000)		40,1.0.	
Other States Intermediate Muni	\$3,859	46	(\$361)	72	\$1,492	33
Debt Fds	40,000		(4-1-1)	. –	* - 1	
Florida Municipal Debt Funds	\$5,521	37	(\$543)	73	\$583	44
Adjustable Rate Mortgage	\$3,123	53	(\$669)	74	(\$11,550)	84
Funds	**,		(,,,,,		(****,****/	
Flexible Income Funds	\$2,403	58	(\$716)	75	\$167	60
Short U.S. Treasury Funds	\$4,041	44	(\$840)	76	\$740	41
New York Municipal Debt	\$18,465	22	(\$1,257)	77	(\$1,766)	80
Funds	<b>410,100</b>		(+ -1 )	• •	(+ .,)	
• • • • • • • • • • • • • • • • • • • •	<b>#20 024</b>	40	(\$1,271)	70	(000 044)	07
GNMA Funds	\$38,231 \$44,700	12		78 79	(\$23,344)	87
Insured Municipal Debt Funds	\$11,700	26	(\$1,292)		(\$5,682)	81
Global Income Funds	\$10,397 \$46,9 <b>7</b> 0	28	(\$1,420)	80	(\$70,481)	89
High Yield Municipal Debt	\$16,870	24	(\$1,514)	81	\$4,397	19
Funds						

Fig. 3.4

U.S. Mortgage Funds	\$9,943	29	(\$1,688)	82	(\$15,412)	85
General U.S. Government Fds	\$27,415	17	(\$2,198)	83	(\$28,556)	88
Corporate Debt Funds A-Rated	\$38,832	11	(\$2,246)	84	\$6,077	18
Insti U.S. Treasury Money	\$101,156	3	(\$2,324)	85	\$36,363	4
Market Funds						
Multi-Sector Income Funds	\$22,644	20	(\$3,071)	86	\$10,853	11
California Municipal Debt	\$30,621	15	(\$3,139)	87	(\$7,862)	83
Funds						
High Current Yield Funds	\$99,746	4	(\$4,915)	88	\$34,996	5
General Municipal Debt Funds	\$71,567	9	(\$7,024)	89	(\$18,412)	86
	** *** ***		0470 004		<b>6740 404</b>	
Total	\$2,361,299		\$172,934		\$713,434	

Fig. 3.5

	Estimated Net Flow (Mil. \$) 1yr ending 12/31/1997	Rank	Estimated Net Flow (Mil. \$) 1yr ending 12/31/1998	Rank	Estimated Net Flow (Mil. \$) 1yr ending 12/31/1999	Rank
Large-Cap Growth Funds	\$12,141	7	\$32,148	1	\$74,290	1
Multi-Cap Growth Funds	\$5,981	12	(\$4,482)	40	\$35,681	2
Science & Technology Funds	\$1,386	23	\$115	21	\$34,645	3
S&P 500 Funds	\$18,545	4	\$25,305		\$32,037	4
Large-Cap Core Funds	\$10,334	9	\$9,769	5	\$17,798	5
Multi-Cap Core Funds	\$12,020	8	\$16,760	4	\$13,726	6
Small-Cap Growth Funds	\$4,304	16	\$1,820	12	\$5,193	7
Global Funds	\$12,826	6	\$5,537	7	\$4,059	8
Mid-Cap Growth Funds	\$1,706	21	(\$4,068)	39	\$3,865	9
Japanese Funds	(\$191)	36	\$281	19	\$3,035	10

Fig. 4.1

Telecommunication	(\$250)	37	\$586	18	\$2,610	11
Funds						
Pacific Region Funds	(\$1,157)	40	(\$902)	32	\$1,993	12
Large-Cap Value Funds	\$26,096	1	\$32,099	2	\$1,779	13
Health/Biotechnology	\$988	26	\$4,98 <del>9</del>	9	\$1,346	14
Funds			****		2005	
International Small-Cap	\$404	28	\$266	20	\$995	15
Funds		_	(0=0.4)	0.4	A775	40
International Funds	\$19,297	3	(\$764)	31	\$775	16
Balanced Funds	\$7,554	11	\$7,433	6	\$591	17
Specialty Diversified	(\$599)	39	(\$240)	27	\$331	18
Equity Funds	, m, m, s, s		(000)	00	(#40)	40
Canadian Funds	(\$51)	34	(\$39)	23	(\$12) (\$16)	19
Pacific Ex Japan Funds	(\$2,323)	41	(\$220)	26	(\$16) (\$94)	20 21
China Region Funds	\$89	32	(\$118) ***********************************	24 22	(\$84) (\$96)	22
Gold Oriented Funds	\$171	29	\$87 \$614	22 17	(\$90) (\$100)	23
Sector/Miscellaneous	(\$264)	38	ф014	17	(\$100)	23
Funds	(6470)	35	(\$152)	25	(\$171)	24
Balanced Target	(\$179)	30	(\$152)	25	(Ψ171)	27
Maturity Funds	\$415	27	(\$1,412)	37	(\$306)	25
Latin American Funds	\$91	31	(\$1,360)	36	(\$321)	26
Natural Resources	ΨΟΙ	٥.	(4.,000)		(+,	
Funds Emerging Markets	\$4,769	15	(\$1,074)	33	(\$413)	27
Funds	Ψ1,700		(4-7		,	
Convertible Securities	\$140	30	(\$395)	29	(\$1,008)	28
Funds	•				•	
Utility Funds	(\$2,840)	42	(\$323)	28	(\$1,215)	29
Real Estate Funds	\$4,282	17	(\$1,280)	34	(\$1,242)	30
Small-Cap Core Funds	\$4,857	14	\$4,093	10	(\$1,854)	31
Mid-Cap Core Funds	\$2,181	18	(\$726)	30	(\$1,974)	32
European Region Funds	\$1,182	25	\$5,385	8	(\$2,479)	33
Global Small-Cap Funds	\$1,812	20	(\$2,487)	38	(\$3,041)	34
Mid-Cap Value Funds	\$1,286	24	(\$1,318)	35	(\$3,480)	35
Flexible Portfolio Funds	\$2,043	19	\$2,503	11	(\$3,720)	36
Global Flexible Port	\$1,624	22	(\$5,128)	41	(\$5,178)	37
Funds				4=	(05.407)	20
Income Funds	\$36	33	\$1,555	15	(\$5,427)	38
Fire a sint Complete	\$5,586	13	\$1,738	14	(\$5,713)	39
Financial Services	φ <b>υ,</b> υου		4 - 1			
Funds Small-Cap Value Funds	\$13,951	5	\$1,754	13	(\$8,795)	40
Equity Income Funds	\$8,330	10	\$1,145	16	(\$14,610)	41
Multi-Cap Value Funds	\$19,878	2	(\$7,431)	42	(\$33,600)	42
Width-Cap Value I and	,				#400 000	
Total	\$198,450		\$122,066		\$139,899	
10.01						

Fig. 4.2

A	8	ပ	0	Ш	ഥ	ဖ	I		1
									i
					Latest		Pro		ſ
	Fund	_	L Cls	Latest	Total Net	Pro	IOB	Load	
	Name	SS	Descripton	TNA Date	Assets (Mil. \$)	<u> </u>	Description	Туре	Ш
rae-Can	Large-Cap Growth Funds								
	ABN AMRO. Growth, Com	LCGE	Large-Cap Growth Funds	03/31/2000	218.5	ග	Growth Funds .	No Load	
	ABN AMRO Growth; Inv	LCGE	Large-Cap Growth Funds	03/31/2000	3.7	ഗ	Growth Funds	Front-End Load	
	Accessor Growth; Adv	LCGE	Large-Cap Growth Funds	03/31/2000	365.0	ග	Growth Funds	No Load	
	Accessor: Growth, Inv	<b>3</b> 907	Large-Cap Growth Funds	03/31/2000	51.3	ග	Growth Funds	Level Load	
	Advance Cap I: Cornerstne	LCGE	Large-Cap Growth Funds	03/31/2000	67.2	O	Growth Funds	No Load	
	Advantus Horizon, A	LCGE	Large-Cap Growth Funds	03/31/2000	72.1	O	Growth Funds	Front-End Load	
	Advantus Horizon;B	LCGE	Large-Cap Growth Funds	03/31/2000	29.9	O	Growth Funds	Back-End Load	
	Advantus Honzon;C	LCGE	Large-Cap Growth Funds	03/31/2000	2.8	O	Growth Funds	Level Load	
	Aetna: Growth; A	LCGE	Large-Cap Growth Funds	03/31/2000	98.0	ഗ	Growth Funds	Front-End Load	
	Aetna: Growth; B	HCGE	Large-Cap Growth Funds	03/31/2000	50	O	Growth Funds	Back-End Load	
	Aetna:Growth;C	LCGE	Large-Cap Growth Funds	03/31/2000	3.0	ග	Growth Funds	Level Load	
	Aetna:Growth;1	100H	Large-Cap Growth Funds	03/31/2000	269.0	O	Growth Funds	Institutional Load	
	AIM Eq: Blue Chip; Rtl A	LCGE	Large-Cap Growth Funds	03/31/2000	2930.5	ত	Growth & Income Funds	Front-End Load	
	AIM Eq Blue Chip, Rtl B	LCGE	Large-Cap Growth Funds	03/31/2000	2494.2	ত	Growth & Income Funds	Back-End Load	
	AIM Eq: Blue Chip, Rtl C	100H	_	03/31/2000	559.9	ত :	Growth & Income Funds	Level Load	
	AIM Eq.Charter; Rtl A	LCGE	_	03/31/2000		ত ;	Growth & Income Funds	Front-End Load	
	AIM Eq:Charter, RtI B	LCGE	_	03/31/2000		ত ট	Growth & Income Funds	Back-End Load	
	AIM Eq:Charter;RtI C	100E	_	03/31/2000		<u>5</u> (	Growth & Income Funds	Level Load	
	AIM Eq:Dent Demogrph;A	LCGE		03/31/2000		<u></u> 9	Growth Funds	Front-End Load	
	AIM Eq:Dent Demogrph,B	<u> </u>		03/31/2000		، د	Growth Funds	Back-End Load	
	AIM Eq.Dent Demogrph;C	100 100 1	_	03/31/2000	. ,	o :	Growth Funds	Level Load	
	AIM Eq:Large Cap Gro;A	LCGE	_	03/31/2000		O	Growth Funds	Front-End Load	
	AIM Eq:Large Cap Gro;B	LCGE	_	03/31/2000		O	Growth Funds	Back-End Load	
	AIM Eq. Large Cap Gro; C	LCGE	_	03/31/2000		O	Growth Funds	Level Load	
	AIM Eq:Whqarten;Rtl A	LCGE	_	03/31/2000	_	O	Growth Funds	Front-End Load	
	AIM Eq. Wingarten, Rtl B	H00H	Large-Cap Growth Funds	03/31/2000	•	O	Growth Funds	Back-End Load	
	All In Manager Del			03/31/2000	27.5	Ċ	Growth Funds	Pool loss	•

Fig. 5.1

					£ \$↓ \$↓ ∰ ♥ ₩ ♠ 100% •	<b>©</b>			1	× 1
		×		Σ	Z	0	a.	o	œ	11-1
Load Type	Latest Total Tu Expense Ratio Po	Turnover P	Turnover NASDAQ Portfolio Symbol	Mgt Co Code	Management Company Name	11/30/1989 ( 12/31/1989 ( Cum Tot Retum	12/31/1989 ( 01/31/1990 ( Cum Tot Return	01/31/1990 02/28/1990 02/28/1990 03/31/1990 Cum Cum Tot Retum Tot Retum	02/28/1990 03/31/1990 Cum Tot Retum	8월일년 1
6 7 8 No.1 cod	1,000	i i	VOLUM	Na	ONI TMOM TOSSET MOMT INC	NIA	VIV.	VIV.	A	
o No tuad 9 Front-End Load	1.520		AGISX	A G	ABN AMRO ASSET MGMT INC	( <del>(</del> <del>)</del> <del>(</del> <del>)</del>	₹ <b>₹</b>	X X	₹ <u>₹</u>	
_	0.920	112	AGROX	ACS	ACCESSOR CAPITAL MGMT LP	N/A	N/A	N/A	N/A	
11 Level Load	N/A		AGRIX	ACS	ACCESSOR CAPITAL MGMT LP	N/A	N/A	N/A	N/A	
	N/A	_	ADCRX	AD<	ADVANCE CAPITAL MGMT INC	N/A	N/A	N/A	N/A	
	1.300		ADIOX	ADS	ADVANTUS CAPITAL MGMT	2.06	-8.27	1.89	4.18	
	2.040		ADHBX	ADS	ADVANTUS CAPITAL MGMT	N/A	<b>∀</b> :	₹ Z	Υ Y Y	
15 Level Load 16 Eron End   ood	2.040	3 5	> C	A P	ADVANIUS CAPITAL MGMI	N/A	<b>₹</b> \$	N/A	₹ <u>5</u>	
	1.940 1.940		\ \ \ \	A FI	AFTNA LIFE INS & ANNTY	A/N	Z Z	N/A	₹ ¥ 2 2 2	
	1.940	142		AET	AETNA LIFE INS & ANNTY	N/A	₹X	ž	₹ Z	
19 Institutional Load	0.940		AEGRX	AET	AETNA LIFE INS & ANNTY	AXA	Α'n	N/A	¥X	
20 Front-End Load	1.190		ABCAX	AIM	AIM ADVISORS INC	4.24	-6.27	1.05	2.53	
21 Back-End Load	1.910		ABCBX	AIM	AIM ADVISORS INC	N/A	N/A	ΑN	N/A	
22 Level Load	1.900		ABCCX	AIM	AIM ADVISORS INC	NA	A/N	ΑX	NA	
_	1.050		CHTRX	ΑM	AIM ADVISORS INC	06:0	-6.14	1.47	2.26	
	1.800		BCHTX	₽₩		ΝΆ	N/A	ΝΆ	N/A	
25 Level Load	1.800		CHTCX	ΣĮ		Α'N	NA	N/A	₹ N	
	₹ X		ADDAX	₹		A/A	K)N	N/A	K/A	
_	N/A		ADDBX	ΣĮ		N/A	N/A	A/A	ΑX	
28 Level Load	N/A	_	ADDCX	핗	AIM ADVISORS INC	N/A	N/A	Ϋ́	ΑX	
29 Front-End Load	1.530		LCGAX	ÄΑ		N/A	N/A	Α/N	ΑW	
30 Back-End Load	2.230		CGBX	₹	AIM ADVISORS INC	N/A	A/N	ΑX	ΥX	
31 Level Load	2.230	71		Σ	AIM ADVISORS INC	N/A	AXN AXN	ΑX	N/A	
32 Front-End Load	1.030	-	<b>∀EIN</b> Χ	AIM	AIM ADVISORS INC	0.26	-8.14	2.22	5.06	
33 Back-End Load	1.820	124	BWEIX	ΑIM	AIM ADVISORS INC	AN	N/A	N/A	¥	
34 Level Load 1.820	1.820	124	124 CWEIX AIM	AIM:	AIM ADVISORS INC	N/A	AN.	W W W	N N	* L

Fig. 5.2

	EB 69/30/1999 09/30/1999	100% •				
DZ EA EB EC ED EE EF EG EH EI EI EI EI EG EH EI	EB 08/31/1999 09/30/1999	ED				
6.2017999 06/31/1999 09/30/1999 10/31/1999 01/31/2000 02/29/2000 03/31/2000 02/31/2000	08/31/1999 09/30/1999		EE	ĒF		
6.43         -2.01         -2.66         8.31         2.12         6.65         -5.79         4.63           -6.43         -2.01         -2.66         8.31         2.12         6.65         -5.79         4.63           -6.45         -2.08         -2.73         8.30         2.07         6.58         -5.78         4.63           -6.56         -0.10         -1.81         7.29         3.24         9.29         -6.81         2.63           -6.59         -0.13         -1.85         7.27         3.20         9.29         -6.81         2.62           -6.59         -0.13         -1.86         7.27         3.20         9.23         -6.81         2.62           -3.31         1.09         -1.86         5.21         4.35         10.75         -5.10         7.81           -3.31         1.09         -1.67         5.28         4.29         10.76         -5.10         7.81           -1.12         -0.32         -2.27         4.74         4.26         4.56         4.56         7.75           -1.18         -0.32         -2.23         4.67         4.12         1.26         4.46         7.32           -1.18         -0.32	Cum		11/30/1999 12/31/1999 ( Cum	12/31/1999 31/31/2000 Sum		000
5.43         -2.01         -2.66         831         2.12         6.65         -5.79         4.63         8           -3.65         -0.10         -1.81         7.29         2.07         6.58         -5.78         4.54         8           -3.59         -0.10         -1.81         7.29         3.24         9.29         6.84         2.62         7           -2.54         1.02         -2.64         7.00         3.68         6.94         -3.76         0.23           -3.31         1.09         -1.67         5.28         4.35         10.26         -5.10         7.81         6.73           -3.31         1.02         -1.67         5.28         4.35         10.77         -5.15         7.76         5.75         5.28         10.77         5.16         7.76         5.26         7.76         5.16         7.76         5.16         7.76         5.16         7.76         5.17         7.75         5.17         7.75         5.17         7.75         5.16         7.76         5.16         7.76         5.16         7.76         5.16         7.76         5.16         7.76         5.16         7.76         5.16         7.76         7.25         7.43         7	Tot Return			rot Return		u.
-5.45         -2.08         -2.73         8.30         2.07         6.58         -5.78         4.54           -3.56         -0.10         -1.81         7.29         3.24         9.29         -6.81         2.69           -3.59         -0.13         -1.84         7.07         3.68         6.94         -3.76         0.23           -2.54         1.82         -2.64         7.00         3.68         6.94         -3.76         0.23           -3.31         1.19         -1.57         5.28         4.35         10.76         -5.15         7.76           -3.31         1.10         -1.66         5.21         4.29         10.17         -5.15         7.75           -1.09         -1.26         5.22         4.29         10.17         -5.16         7.75           -1.09         -1.27         4.79         4.20         10.18         -5.16         7.43           -1.14         -0.36         -2.27         4.74         4.26         12.62         4.54         7.42           -1.18         -0.37         -2.23         4.74         4.26         12.62         4.54         7.22           -1.18         -0.38         1.09         4.72	-2 66		6.65	-5.79	8	
3.59         0.10         7.27         3.24         9.23         6.01         2.62           2.54         1.65         6.24         7.27         3.24         9.23         6.04         2.62           2.54         1.67         5.28         4.35         10.26         -5.10         7.81           3.33         1.12         -1.66         5.21         4.35         10.17         -5.15         7.76           3.33         1.12         -1.66         5.21         4.29         10.18         -5.16         7.76           -1.09         -1.06         5.21         4.29         10.18         -5.16         7.75           -1.09         -0.32         -2.27         4.78         4.20         10.18         -5.16         7.75           -1.12         -0.36         -2.33         4.67         4.15         12.59         -4.66         7.36           -1.13         -0.34         -1.02         -2.23         4.67         4.15         12.55         -4.66         7.72           -2.74         -0.35         -1.02         -3.28         4.20         12.65         -4.46         7.32           -2.78         -0.33         -1.04         4.26	-2.73		6.58	-5.78 6.91		01 -
2.54         1.82         -2.64         7.00         3.68         6.94         -3.76         0.23           -3.30         1.19         -1.57         5.28         4.35         10.26         -5.10         7 81           -3.31         1.09         -1.56         5.21         4.29         10.17         -5.15         7.76           -3.33         1.12         -1.66         5.21         4.29         10.18         -5.15         7.75           -1.09         -0.32         -2.27         4.78         4.20         10.18         -5.15         7.75           -1.12         -0.36         -2.33         4.67         4.15         12.59         -4.56         7.35           -1.18         -0.37         -2.30         4.66         4.15         12.59         -4.56         7.35           -1.08         -0.38         7.02         4.26         12.65         -4.45         7.42           -2.77         -0.79         -0.98         7.02         3.23         8.63         3.30         1.57           -2.84         -0.08         -1.02         6.96         3.16         8.66         3.36         1.52           -2.84         -0.18         -1.29 <td>18</td> <td></td> <td>9.73 9.73</td> <td>6.0- 6.84</td> <td></td> <td>- 40</td>	18		9.73 9.73	6.0- 6.84		- 40
3.30         119         -1.57         5 28         4.35         10.26         -5.10         7 81           3.31         1.09         -1.66         5.21         4.32         10.17         -5.15         7.76           3.33         1.12         -1.66         5.22         4.29         10.18         -5.15         7.75           -1.09         -0.32         -2.27         4.78         4.20         12.59         -4.50         7.43           -1.12         -0.36         -2.23         4.67         4.15         12.52         -4.56         7.35           -1.18         -0.36         -2.23         4.66         4.13         12.55         -4.56         7.35           -1.08         -0.37         -2.23         4.74         4.26         12.55         -4.56         7.32           -1.08         -0.37         -2.23         4.74         4.26         12.55         -4.45         7.32           -1.08         -0.39         7.02         3.23         8.63         -3.36         1.57           -1.08         -1.02         6.96         3.16         8.56         -3.46         7.42           -1.84         -1.02         6.96         3.16	-2.64		6.94	-3.76		
-3.31         1.09         -1.66         5.21         4.32         10.17         -5.15         7.76           -3.33         1.12         -1.65         5.22         4.29         10.18         -5.15         7.75           -1.09         -0.32         -2.27         4.78         4.20         12.69         -4.56         7.43           -1.12         -0.36         -2.33         4.66         4.15         12.62         -4.56         7.35           -1.18         -0.37         -2.20         4.74         4.26         12.65         -4.46         7.32           -1.08         -0.27         -2.23         4.74         4.26         12.65         -4.46         7.32           -1.09         -0.28         7.02         3.23         8.63         -3.30         1.57           -2.77         -0.89         7.02         3.23         8.63         -3.36         1.57           -2.84         -0.85         -1.02         6.96         3.16         8.58         -3.36         1.57           -2.84         -0.85         -1.02         6.96         3.16         8.58         -3.36         1.52           -3.84         -0.18         -1.29         5.86<	-1.57		10.26	-5.10		
1.09 0.32 2.27 4.78 4.20 12.50 4.50 7.43 1.10 0.37 2.23 4.67 4.15 12.55 4.56 7.36 1.10 0.37 2.23 4.67 4.15 12.55 4.45 7.32 1.10 0.37 2.23 4.74 4.26 12.62 4.45 7.32 1.10 0.37 2.23 4.74 4.26 12.62 4.45 7.32 2.24 0.38 7.02 3.23 8.63 3.30 1.57 2.34 1.04 6.96 3.16 8.58 3.36 1.52 3.75 0.06 1.02 6.96 3.16 8.58 3.36 1.52 3.30 1.57 0.03 1.04 6.96 3.16 8.58 3.36 1.52 3.30 1.57 0.03 1.02 8.98 9.90 1.59 1.14 3.73 3.30 1.57 0.73 0.09 9.00 9.74 15.88 2.79 12.89 1.57 0.73 0.09 9.00 9.74 15.88 2.79 12.89 1.57 0.73 0.09 9.00 9.74 15.88 2.79 12.89 1.57 0.73 0.09 9.00 9.74 15.88 2.79 12.89 2.26 0.09 0.09 9.74 15.89 1.01 0.87 20.86 2.26 0.09 0.09 9.74 15.00 0.87 1.01 0.87 20.86 2.27 0.06 0.09 4.44 6.78 15.03 1.01 0.87 20.78 2.27 0.06 0.09 0.73 4.44 6.78 10.57 3.37 16.25 2.27 0.06 0.09 0.73 4.44 6.78 10.57 3.37 16.25 2.27 10.63 0.73 1.44 1.74 1.70 1.70 1.70 1.70 1.70 1.70 1.70 1.70	-1.86 78		10.17	रो. त री. स		01.0
1.12         0.36         -2.33         4.67         4.15         12.62         -4.56         7.36           -1.18         -0.37         -2.23         4.66         4.13         12.65         -4.45         7.32           -1.08         -0.27         -2.23         4.74         4.26         12.62         -4.45         7.42           -2.77         -0.79         -0.98         7.02         3.23         8.63         -3.30         1.67           -2.84         -0.83         -1.04         6.96         3.16         8.58         -3.36         1.52           -2.84         -0.85         -1.02         6.96         3.16         8.58         -3.36         1.52           -2.84         -0.85         -1.02         6.96         3.16         8.58         -3.36         1.52           -3.84         -0.18         -1.29         5.85         4.12         11.41         -3.73         3.30           -3.83         -0.18         -1.29         5.85         4.12         11.44         -3.72         3.30           -3.83         -0.18         -1.29         5.85         4.12         11.44         -3.72         3.30           -1.57         0.73<	-2.27		12.59	5.4.5		
-1.18         -0.37         -2.30         4.66         4 13         12.55         -4.54         7.32           -1.08         -0.27         -2.23         4,74         4.26         12.62         -4.45         7.42           -2.77         -0.79         -0.98         7.02         3.23         8.63         -3.30         1.57           -2.84         -0.83         -1.04         6.96         3.18         8.56         -3.36         1.52           -2.84         -0.85         -1.02         6.96         3.16         8.58         -3.36         1.52           -2.84         -0.85         -1.02         6.96         3.16         8.58         -3.36         1.52           -3.75         -0.06         -1.29         5.86         4.12         11.41         -3.73         3.30           -3.84         -0.18         -1.29         5.86         4.12         11.44         -3.73         3.30           -3.83         -0.18         -1.29         5.86         4.12         11.44         -3.73         3.30           -1.57         0.73         0.27         9.80         9.80         15.90         -2.79         12.83           -1.57         0.73	-2.33		12 52	-4.56		
-1.08 -0.27 -2.23 4.74 4.26 12.62 -4.45 7.42 7.42 7.03 9.03 9.7.02 3.23 8.63 -3.30 1.57 7.42 7.23 4.74 4.26 12.62 -4.45 7.42 7.42 7.079 -0.98 7.02 3.23 8.63 -3.36 1.57 7.23 7.104 6.96 3.16 8.58 -3.36 1.52 7.284 -0.85 -1.02 6.96 3.16 8.58 -3.36 1.52 7.36 7.42 7.42 7.42 7.42 7.43 7.43 3.37 7.43 7.43 7.43 7.43 7.43	-2.30		12.55	-4.54		<b></b>
-2.77 - 0.79 - 0.38	-2.23		12.62	4.45		
2.84				ان م م		
3.75         -0.06         -1.28         5.93         4.20         1150         -3.68         3.37           -3.84         -0.18         -1.29         5.86         4.12         11.41         -3.73         3.30           -3.83         -0.18         -1.29         5.85         4.12         11.44         -3.72         3.30           1.57         0.73         0.27         8.98         9.80         15.90         -2.72         12.91           1.57         0.73         0.09         9.00         9.74         15.88         -2.79         12.89           1.57         0.73         0.09         9.00         9.74         15.88         -2.79         12.83           2.48         0.19         0.19         6.41         6.64         15.03         10.87         20.86           2.58         0.09         -0.19         6.43         6.68         14.93         0.87         20.78           2.79         0.05         0.19         6.43         6.86         16.01         20.78           2.70         0.05         0.19         4.44         6.78         16.21         16.23           2.79         0.063         0.09         4.44	-1.02		85.58	 .36		
3.84         -0.18         -1.29         5.86         4.12         11.41         -3.73         330           -3.83         -0.18         -1.29         5.85         4.12         11.44         -3.72         3.30           1.57         0.73         0.27         8.98         9.80         15.90         -2.72         12.91           1.57         0.73         0.09         9.00         9.74         15.88         -2.79         12.89           1.57         0.73         0.09         9.00         9.74         15.88         -2.79         12.89           2.48         0.19         6.41         6.64         15.03         1.01         20.87           2.58         0.09         -0.19         6.43         6.58         14.93         0.87         20.86           2.79         0.05         0.19         6.43         6.48         15.01         0.87         20.78           2.79         0.05         0.19         4.44         6.78         10.57         3.67         15.22           2.79         0.05         0.19         4.44         6.78         10.57         3.67         15.22           2.79         0.65         0.69	-1.28		11 50	-3 58		
-3.83 -0.18 -1.29 5.85 4.12 11.44 -3.72 3.30 1.57 0.73 0.27 8.98 9.80 15.90 -2.72 12.91 1.57 0.73 0.09 9.00 9.74 15.88 -2.79 12.91 1.57 0.73 0.09 9.00 9.74 15.88 -2.79 12.89 12.83 1.57 0.19 0.19 6.41 6.64 15.03 1.01 20.87 12.83 1.258 0.09 0.19 6.43 6.58 14.93 0.87 20.86 1.258 0.09 0.19 6.43 6.48 15.01 0.87 20.78 1.270 0.65 0.69 4.44 6.78 10.57 3.67 15.22 1.279 0.65 0.69 4.44 6.78 10.57 3.67 15.22 1.279 0.65 0.69 4.44 6.78 10.57 3.67 15.22 1.279 0.65 0.69 4.44 6.78 10.57 3.67 15.25	-1.29		11.41	-3.73		
1.57 0.73 0.27 0.39 9.00 15.90 -2.72 12.91 1.57 0.73 0.09 9.00 9.74 15.88 -2.79 12.89 1.57 0.73 0.09 9.00 9.74 15.88 -2.79 12.89 1.57 0.73 0.09 9.00 9.74 15.88 -2.79 12.83 1.283 0.09 0.019 6.41 6.64 15.03 1.01 20.87 20.86 1.258 0.09 0.019 6.43 6.48 15.01 0.87 20.86 1.270 0.05 0.019 6.43 6.48 15.01 0.87 20.78 1.270 0.05 0.08 1.44 6.78 10.57 16.22 1.279 0.069 0.73 4.44 6.78 10.57 16.22 1.279 0.069 0.73 4.43 6.77 10.52 1.367 15.25 1.279 0.069 0.73 4.43 6.77 10.52 1.367 15.25 1.279 0.089 0.73 4.44 6.78 10.57 16.22 1.279 0.089 0.73 4.43 6.77 10.52 1.367 15.25 1.289 1.	- 23		11.44	-3.72 -3.72		
1.57 0.73 0.09 9.00 9.74 15.89 2.79 12.83 2.48 0.19 0.19 9.00 9.74 15.88 2.79 12.83 2.48 0.19 0.19 6.41 6.64 15.03 1.01 20.87 2.58 0.09 0.12 6.43 6.58 14.93 0.87 20.86 2.70 0.63 0.78 4.50 6.86 10.65 3.62 16.33 2.79 15.22 2.79 0.65 0.89 4.44 6.78 10.57 3.67 15.22 2.79 0.69 0.73 4.43 6.77 10.62 3.67 15.25 15.25 17 10.87 20.88 17.8 18.81 18.22 2.79 0.68 0.73 4.43 6.77 10.62 3.67 15.25 15.2	0.27		15.30 88.41	2).7- 07.0		
-2.48 0.19 -0.19 6.41 6.64 15.03 1.01 20.87 -2.58 0.09 -0.28 6.43 6.58 14.93 0.87 20.86 -2.58 0.09 -0.19 6.43 6.48 15.01 0.87 20.78 -2.70 -0.63 0.78 4.50 6.85 10.65 -3.62 15.33 -2.79 -0.65 0.69 4.44 6.78 10.57 -3.67 15.22 -2.79 -0.69 0.73 4.43 6.77 10.52 -3.67 15.25 ✓ MF selection #2 $\chi$ MF selection #3 $\chi$ Tracking TR $\chi$ Possible method to AC selection $\chi$	0.09		15.88	-2.79		
-2.58 0.09 -0.28 6.43 6.58 14.93 0.87 20.86 -2.58 0.09 -0.19 6.43 6.48 15.01 0.87 20.78 -2.70 -0.63 0.78 4.50 6.85 10.65 -3.62 15.33 -2.79 -0.65 0.69 4.44 6.78 10.57 -3.67 15.22 -2.79 -0.69 0.73 4.43 6.77 10.52 -3.67 15.25 ✓ MF selection #2 〈 MF selection #3 〈 Tracking TR 〈 Possible method to AC selection /   ◆	-0.19		15.03	1.01		
-2.58 0.09 -0.19 6.43 6.48 15.01 0.87 20.78 -2.70 -0.63 0.78 4.50 6.85 10.65 -3.62 15.33 -2.79 -0.65 0.69 4.44 6.78 10.57 -3.67 15.22 -2.79 -0.69 0.73 4.43 6.77 10.52 -3.67 15.25 // MF selection #2 \( \text{ MF selection #2 \( \text{ MF selection #3 \( \text{ Tracking TR \( \text{ Possible method to AC selection \( / \text{ MF} \)} \)	-0.28		14.93	0.87		
-2.70 -0.63 0.78 4.50 6.85 10.65 -3.62 15.33 -2.79 -0.65 0.69 4.44 6.78 10.57 -3.67 15.22 -2.79 -0.69 0.73 4.43 6.77 10.52 -3.67 15.25 ✓ MF selection #2	-0.19		15.01	0.87		_
-2.79 -0.65 0.69 4.44 6.78 10.57 -3.67 15.22 -2.79 -0.69 0.73 4.43 6.77 10.52 -3.67 15.25 	0.78		10 65	-3.62		
-2 79 -0.69 0.73 4.43 6.77 10.52 -3.67 15.25	0.69		10.57	-3.67		0.1
\( \text{MF selection #2 } \text{ MF selection #3 } \text{ Tracking TR }      \)	9 0.73 4.4		10 52	-3 67		•
	Κ MF selection #3 Κ Trackir		method to AC se	ection /	<u> </u>	=
	$\sim$	-1.29 5.8 0.27 8.9 0.09 9.0 0.09 9.0 0.09 6.4 -0.19 6.4 0.78 4.5 0.69 4.4 0.73 4.45			4.12 11.44 9.80 15.90 9.74 15.88 6.64 15.03 6.58 14.93 6.48 15.01 6.85 10.65 6.77 10.57 6.77 10.52 Possible method to AC selec	4.12 11.44 -3.72 3.30 9.80 15.90 -2.72 12.91 9.74 15.88 -2.79 12.89 9.74 15.88 -2.79 12.83 6.64 15.03 1.01 20.87 6.58 14.93 0.87 20.86 6.48 15.01 0.87 20.78 6.85 10.65 -3.62 15.33 6.78 10.57 -3.67 15.25 6.77 10.52 -3.67 15.25 Possible method to AC selection /   ◆

Fig. 5.3

인 연	במור הובא הוצבור בתוווסר המוז הפרם	Accounting	Accounting Window Help						X
	多四米 4四十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二		👛 😍 S for 24 24	· **001		<u></u>			
A522	11								
A	8	ပ	Q	ш	<b>i</b> L.	ග	I		1
522	UAM:Sirach Eqty;Inst	_	Large-Cap Growth Funds	03/31/2000	54.2	<u>ص</u>	Growth Funds	Institutional Load	
523	UAM Sirach Growth; Inst	_	_arge-Cap Growth Funds	03/31/2000	72.2	_ ල	Growth Funds	Institutional Load	
524	UAM: Sirach Growth; Int Sv	_	-arge-Cap Growth Funds	03/31/2000	11.0	_ ල	Growth Funds	Institutional Load	
525	UBS lnv US Lg Cap Gro	1 3901	arge-Cap Growth Funds	03/31/2000	7.7	ග	Growth Funds	Level Load	
526	UMB Scout Stock Select	1997	arge-Cap Growth Funds	03/31/2000	7.9	ග	Growth Funds	No Load	
527	Unified: Starwood Strat	1 3901	arge-Cap Growth Funds	03/31/2000	3.4	<u></u>	Growth Funds	No Load	
528	United Vanguard Fund; A	1997	arge-Cap Growth Funds	03/31/2000	3013.2	O	Growth Funds	Front-End Load	
529	United Vanguard Fund; Y	1997	-arge-Cap Growth Funds	03/31/2000	19.6	O	Growth Funds	Institutional Load	
530	Universal Capital Growth	LCGE L	_arge-Cap Growth Funds	02/23/2000	18.3	₹	Capital Appreciation Funds	Front-End Load	
531	USAA First Srt Growth	_	_arge-Cap Growth Funds	03/31/2000	235.3	ഗ	Growth Funds	No Load	
532	Value Line Fund	_	_arge-Cap Growth Funds	03/31/2000	503.3	ত	Growth & Income Funds	No Load	
533	Value Line Lyge Growth	1997	_arge-Cap Growth Funds	03/31/2000	785.7	ర్ర	Capital Appreciation Funds	No Load	
534	Value Line Multinatl Co	1001	_arge-Cap Growth Funds	03/31/2000	45.1	ত	Growth & Income Funds	No Load	
535	Van Kampen Eq Gro;A	_	_arge-Cap Growth Funds	03/31/2000	37.1	ტ	Growth Funds	Front-End Load	
536	Van Kampen Eq Gro;B	_	Large-Cap Growth Funds	03/31/2000	44.1	ഗ	Growth Funds	Back-End Load	
537	Van Kampen Eq Gro;C	_	Large-Cap Growth Funds	03/31/2000	15.7	ග	Growth Funds	Level Load	
538	Vanguard Growth Indx; Ins		Large-Cap Growth Funds	03/31/2000	633.2	ഗ	Growth Funds	Institutional Load	
539	Vanguard Growth Indx; Inv	1001	Large-Cap Growth Funds	03/31/2000	16387.4	ഗ	Growth Funds	No Load	
540	Vanguard US Growth	1997	Large-Cap Growth Funds	03/31/2000	20038.9	ග	Growth Funds	No Load	
541	WellsFargo:Lg Co Gr,A	- 1001	Large-Cap Growth Funds	03/31/2000	292.6	ഗ	Growth Funds	Front-End Load	
542	WellsFargo:Lg Co Gr.B	1 1 1 1 1 1	Large-Cap Growth Funds	03/31/2000	378.3	ധ	Growth Funds	Back-End Load	
543	WellsFargo:Lg Co Gr.l	- 1907	Large-Cap Growth Funds	03/31/2000	1366.2	ഗ	Growth Funds	Institutional Load	
544	White Oak Growth Stock	100E	Large-Cap Growth Funds	03/31/2000	3701.8	O	Growth Funds	No Load	
545	Wilshire Tgt:LC Gr,Inst	1997	Large-Cap Growth Funds	03/31/2000	121.7	ග	Growth Funds	Institutional Load	
546	Wilshire Tgt:LC Gr;Inv	LCGE	Large-Cap Growth Funds	03/31/2000	609.8	ග	Growth Funds	No Load	
547	WM: Growth; A	LCGE	Large-Cap Growth Funds	03/31/2000	414.7	O	Growth Funds	Front-End Load	
548	WM:Growth;B	LCGE	Large-Cap Growth Funds	03/31/2000	516.3	ഗ	Growth Funds	Back-End Load	
349	WM:Growth;i	LCGE	Large-Cap Growth Funds	03/31/2000	477.1	ഗ	Growth Funds	Institutional Load	
550	Wp Stewart Growth Fund	LCGE	Large-Cap Growth Funds	03/31/2000	76.3	ල	Growth Funds	No Load	,
551	WT:Wilm Lg Cap Gro;Instl	CGE	Large-Cap Growth Funds	03/31/2000	3200	ပ	Growth Funds	No Load	
552	Average/Total				583102.9				
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Fig. 5.4

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1522	<ul><li>Institutional Load</li></ul>	ad								
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522 Institutional Load	0.900	_	SIEGX	UAM	UAM FUND SERVICES INC	N/A	ΑX	₹X	¥.	
523 Institutional Load	1.010		SGRWX	UAM	UAM FUND SERVICES INC	N/A	ΝΆ	₹ Z	¥¥	
524 Institutional Load	1 240		SGWSX	UAM	UAM FUND SERVICES INC	ΥN	N/A	A/N	N/A	
	1.570	51		NBS	UBS A G /UBS BRINSON	¥X	N/A	ΝΆ	ΝΆ	
526 No Load	N/A	¥X		UMB	UMB BANK N. A.	NA	ΑX	NA	ΝΆ	
527 No Load	1.500		STRWX	<u>₹</u>	UNIFIED INV ADVISERS INC	N/A	N/A	N/A	ΑŽ	
528 Front-End Load	1.130		UNVGX	WNR	WADDELL & REED INV MGMT CO	0.72	-5.99	3.10	3.36	_
529 Institutional Load	0.900	84		WNR	WADDELL & REED INV MGMT CO	N/A	N/A	Υ Y	N N	.,,,
530 Front-Find Load	2.000	7	UCGFX	GBG	GRAVER BOKHOF GOODWIN & SULLIVAN LP	N/A	Α'n	NA	ΝΆ	
531 No Load	1.650	27	UFSGX	USA	USAA INVESTMENT MGMT CO	ΝΆ	N/A	ΝΆ	₹¥	-
532 No Load	0.770		VLFX	\A⊦	VALUE LINE INC	0.32	-7.97	1.73	4.26	
533 No Load	0.870		VALIX VALIX	\A⊦	VALUE LINE INC	0.83	-8.58	1.56	3.64	
534 No Load	1,580	မ္က	VLUMX	ΑΑ.	VALUE LINE INC	N/A	N/A	ΝΆ	ďΧ	-
535 Front-End Load	1,500		VEGAX	¥	VAN KAMPEN INV ADV CORP	N/A	N/A	ΝΆ	ΑX	
536 Back-End Load	2.250		VEGBX	¥	VAN KAMPEN INV ADV CORP	NA	NA	N/A	N/A	
537 Level Load	2.250	126	VEGCX	¥	VAN KAMPEN INV ADV CORP	N/A	N/A	NA	N/A	
538 Institutional Load	0.120	23	<b>VIGIX</b>	YAN	VANGUARD GROUP INC	N/A	N/A	N/A	ΑΆ	,
539 No Load	0.220		VIGRX	Z A N	VANGUARD GROUP INC	N/A	N/A	N/A	K/A	
540 No Load	0 380	49	<b>WNUSX</b>	YAN	VANGUARD GROUP INC	1.09	-5.97	2 29	4 58	
541 Front-End Load	1.200	8	NVLAX	WFB	WELLS FARGO BANK	ΝΆ	N/A	N/A	δ N	****
542 Back-End Load	1 760	8	NALOX	WFB	WELLS FARGO BANK	N/A	ΝΆ	N.A	¥¥	
543 Institutional Load	1 000	28	NALCX	WFB	WELLS FARGO BANK	ΚΆ Ν	Κ¥	ΝΆ	XX	
544 No Load	1 000	9	WOGSX	OĄŁ	OAK ASSOCIATES	N/A	₹ Z	N/A	₹ Ž	
545 Institutional Load	0.620	2	WLCGX	WLS	WILSHIRE ASSOCIATES INC	₹ N	₹ Ž	₹ Ž	₹ Ž	
546 No Load	0.730	2	OTLGX	WLS	WILSHIRE ASSOCIATES INC	N.A.	¥≥ Z	¥/≥	¥.	_
547 Front-End Load	1.272	119	SRGFX	WMS	WASHINGTON MUTUAL INC	Ϋ́	ΝA	¥Z.	₹X	
548 Back-End Load	2.032	119	SOGRX	N/W	WASHINGTON MUTUAL INC	N/A	<b>∢</b> ≥	ΑX	ΚX	
549 Institutional Load	0.872	119		WWS	WASHINGTON MUTUAL INC	N/A	N/A	₹ Ž	ΑX	
550 No Load	1.900	33	WPSGX	WPS	STEWART W.P. & CO INC	N/A	N/A	N/A	N/A	
551 No Load	0.800	23	RMGPX	₩	WILMINGTON TRUST/RODNEY SQUARE	1.12	-7.84	3.27	3.67	
	1.445	94				0.91	-7.29	1.78	3.29	
553	1.350	28				0.85	-7.38	1.89	3.25	
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Fig. 5.5

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			EG	2.49	3.07	3.00	4 58	-4.48	15.60	15.62	15 65	0.67	4.65	- 86	89.	2 42	3.03	2.99	2.92	2.06	2.07	2.14	187	182	- 88	9.14	3.51	3.47	12.27	12.18	12.28	-4.96	14.14	75.7	6.01	-	_ 
			EF	-3.89	-3 93	-3 96 -	-3.98	<b>-4</b> 95	-8.48	-2.76	-2.67	-4.03	-4.44	-5.79	-5.86	-5.01	-254	-2.64	-2.57	-6.67	-6.67	-5.56	-2.57	-2.59	-2 54	1.00	-6.79	9 9 9	0.17	0.09	0.23	<b>.4</b> .63	-4.91	-4.04	-4.13	/ :In-th-	/ wecome
			EE	10.48	10.38	10.37	9.98	2.07	22.22	15.25	15.20	4.48	6.57	6.32	7.95	9.74	9.75	9.70	9.63	7.81	7.79	7.08	11.00	10.93	11.00	8.93	11.63	11.62	19.74	19.70	19.76	4.67	21.69	12.21	11.16	4 to 440	
	€ • %		ED	4.96	5 13	5 08	5 04	3.42	14.08	7.08	2.06	3.38	3.94	5.18	5.10	6.15	4.73	4.70	4.70	4.28	4.28	3.28	3.65	3.60	3.68	5.31	3.02	3.00	10.94	10.85	10.98	0.60	7.37	5.80	5.18	/ Docember	i pinicent V
	%001 <b>(♣)</b>		EC	5.79	6.48	6.51	5.39	1.90	9.25	6.23	6.32	3.92	4.24	5.03	6.29	4.05	5.64	5.61	5.61	6.93	6.90	8.65	9 63	8.57	8.63	10.51	8.03	8.00	7.41	7.36	7.46	7.08	8.22	7.16	7.10	Tracking TO	VI SINGII
	<b>₩</b> 100 †¥		EB	-1.29	-165	-1.65	-3 40	-3.57	-1.44	0.70	0.70	-4.19	-3.12	-1.33	-1.35	-1.82	0.65	0.49	0.49	-1.69	- 69.	-1 98	-3.82	-384	-3 79	-0. <b>8</b> 0	-2.39	-2.42	4.89	4.81	4.93	-0.84	-1.20	-0.77	-0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -	€ # City	י כוברווחוו #ס
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-			λa	6.98	2.06	7 08	7 45	2.34	21.5	10.44	10.43	6.16	7.29	7.53	7.85	6.87	7.73	7.70	7.71	7.30	7.28	78.7	8 80	8.77	8 83	10.80	7.06	7.01	8.Od	7.95	7.97	5.95	8.74	7.27	7.26	# # # # # # # # # # # # # # # # # # #	ש אפוברנוסני # ז
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Fig. 5.6

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2nd eliminate duplicate funds by same MI	by same	notions. MF company and for same mandate (order of preference: lowest total expenses. (1st no load, 2nd institutional load, 3rd front-end k	nandate (order	r of preference:	lowes	t total expenses	(1st no load, 2nd in	nstitutional load, 3rd	front-end k
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10 Name	Cis S	Descripton	TNA Date A	Assets (Mil. \$)	<u>0</u>	Description	Туре	Expense Ratio Portfolio Syn	ortfolio Syn
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	22.2	Large-Cap Growth Funds	03/31/2000	320.U	ب ص د	Growth Funds	No Load	9. 6	25 KM
13 wp Stewart Growth Fund	200	Large-Cap Growth Funds	03/31/2000	7447	_	Growth Funds	No Coad	E 1	32 WF
	1001 1001	Large-Cap Growth Funds	03/31/2000	609.8		Growth Funds	No Load	0.73	JAC 52
	1001	Large-Cap Growth Funds	03/31/2000	3701.8	_	Growth Funds	No Load	-	
	LCGE	Large-Cap Growth Funds	03/31/2000	1366.2	_ ق	Growth Funds	Institutional Load	-	28 NVL
	LCGE	Large-Cap Growth Funds	03/31/2000	20038.9		Growth Funds	No Load	0.39	49 VW
	HCGE	Large-Cap Growth Funds	03/31/2000	16387.4		Growth Funds	No Load	0.22	29 VIG
	ECGE	Large-Cap Growth Funds	03/31/2000	785.7	_	Capital Appreciatic No Load	ic No Load	0.87	54 VAL
21 Value Line Fund	LCGE	Large-Cap Growth Funds	03/31/2000	503.3		Growth & Income I No Load	No Load	0.77	98 VLIF
	LCGE	Large-Cap Growth Funds	02/29/2000	18.3	გ.	Capital Appreciat	Capital Appreciatic Front-End Load	2	71 UCC
	LCGE	Large-Cap Growth Funds	03/31/2000	3013.2	ഗ	Growth Funds	Front-End Load	1.13	84 UN
24 UAM: Sirach Growth, Inst	100E	Large-Cap Growth Funds	03/31/2000	72.2	დ ;	Growth Funds	Institutional Load	1.01	90 86
	ECGE	Large-Cap Growth Funds	03/31/2000	309.2	ან მ	Capital Appreciatic No Load	ic No Load	1.04	250 TRG
	E CGE	Large-Cap Growth Funds	03/31/2000	7.4.9 0.1.0	ქ ი	Capital Appreciatic No Load	ic No Load	1.64	56 FMF
	155 155 145 145 145 145 145 145 145 145	Large-Cap Growth Funds	03/31/2000	447.2	י פי	Growth Funds	Institutional Load	88.5	48 - 60
28 Target: Large Cap Growth		Large-Cap Growth Funds	03/31/2000	615.4	ල (	Growth Funds	No Load	0.68	54 TAL
	LCGE	Large-Cap Growth Funds	03/31/2000	147.9	ග	Growth Funds	Front-End Load	1.49	71 SVL
	HCGE	Large-Cap Growth Funds	03/31/2000	1950.6	ত (	Growth & Income f No Load	FNo Load	1	
	LCGE	Large-Cap Growth Funds	03/31/2000	1158.3	ග	Growth Funds	No Load	0.94	
32 SS Research Growth; S	LCGE	Large-Cap Growth Funds	03/31/2000	235.4	ග	Growth Funds	Institutional Load	0.72	
3 Spectra Fund	LCGE	Large-Cap Growth Funds	03/31/2000	1098.3	5	Capital Appreciatic No Load	ic No Load	1.96	191 SPE
Sit Large Cap Growth	HCGE.			178.2 GI	ত ত	Growth & Income I No Load		-	0,
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Fig. 6.1

Fig. 6.2

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	Ä	02/29/2000 03/31/2000 Cum Tot Retum	5.80% 14.63% 17.5% 8 98% 11 80% 9.03% 9.03% 9.03% 9.25% 9.35% 9.35% 9.35% 1.38% 1.38% 1.38% 1.38% 1.38% 1.38% 1.38% 1.38%	7.91%
	BW	01/31/2000 02 02/29/2000 03 Cum Col Tot Return To	14.14% -4.96% 12.27% 3.47% 9.14% 1.88% 1.86% 1.86% 1.67% 1.67% 1.6.13% 1.6.19% 1.6.39% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49% 1.6.49%	4.27%
	} <u>B</u>	10/31/1999 11/30/1999 12/31/1999 01/31/2000 11/30/1999 12/31/1999 01/31/2000 02/29/2000 Cum Cum Cum Cum Tot Return Tot Return Tot Return	4 4 9 19 18 8 19 18 8 19 18 8 19 18 8 19 18 8 19 18 8 19 18 18 18 18 18 18 18 18 18 18 18 18 18	-3 58% election /
	<u>B</u>	11/30/1999 12/31/1999 Cum Tot Retum	21.69% 4.67% 19.74% 11.62% 8.93% 11.00% 7.79% 7.79% 7.95% 15.25% 11.36% 12.26% 11.36% 11.36% 11.36% 11.31%	4.41% 11 96% -3 Possible method to AC selection
© • %	<b>a</b>	10/31/1999 11/30/1999 Cum Tot Return	7.37% 10.94% 10.94% 3.00% 5.31% 4.28% 4.28% 5.13% 6.23% 6.23% 4.57% 10.87% 10.87%	~
**************************************	88	09/30/1999 10/31/1999 10/31/1999 11/30/1999 Cum Cum Tot Retum Tot Return	8.22% 7.08% 7.41% 8.00% 8.63% 8.65% 6.29% 6.29% 6.29% 7.37% 7.20% 7.20% 7.37% 7.20% 9.68% 9.68% 9.68% 7.37% 7.20% 7.49%	7.79% Å Tracking TR
<b>%</b> ∰ †¥	띪	08/31/1999 09/30/1999 Cum Tot Retum	-1.20% -1.20% -1.88% -1.98% -1.98% -1.33% -1.53% -1.53% -1.53% -1.53% -1.53% -1.53% -1.53% -1.53% -1.53% -1.53%	-0.16% selection #3
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ह्य	8	05/31/1999 06/30/1999 Cum Tot Retum	8.74% 9.05% 9.01% 7.01% 10.80% 10.80% 7.23% 7.53% 7.53% 10.44% 7.53% 6.16% 6.16% 10.44% 7.53% 7.53% 7.53% 7.63% 8.85% 7.65% 7.65% 8.85% 7.65% 8.95%	Se
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Fig. 6.3

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102 Drey/Founders. Growth, F	JCGE	_	Large-Cap Growth Funds	03/31/2000	3602.7	ග	Growth Funds	No Load	1.09	117 FRC
103 Delaware US Growth;Inst	LCGE	_	Large-Cap Growth Funds	03/31/2000	81.7	O	Growth Funds	Institutional Load	156	132 DEL
104 Concert Inv.Gra;1	LCGE	_	_arge-Cap Growth Funds	03/31/2000	5181.8	O	Growth Funds	Front-End Load	0.76	37 CSC
105 Columbia Growth	LCGE	_	Large-Cap Growth Funds	03/31/2000	2390.5	O	Growth Funds	No Load	0.65	118 CLN
106 CitiFunds LgCp Gro,A	LCGE	_	_arge-Cap Growth Funds	03/31/2000	512.2	ග	Growth Funds	Front-End Load	1.05	53 CFL
107 Chase:Equity Growth, Prm	LCGE	_	Large-Cap Growth Funds	03/31/2000	366 9	O	Growth Funds	Institutional Load	-	35 RITE
108 CG Cap Mkts: Lrg Cap Gro	LCGE		Large-Cap Growth Funds	03/31/2000	27857	O	Growth Funds	No Load	0.68	0 TLG
109 Burnham Inv:Burnham,A	LCGE	_	arge-Cap Growth Funds	03/31/2000	205.9	ō	Growth & Income ! Front-End Load	f Front-End Load	1.3	55 BUF
110 Bridgeway:Social Resp	LCGE		Large-Cap Growth Funds	03/31/2000	5.7	O	Growth Funds	No Load	7.5	58 BR:
111 Boston 1784 Gro & Inc	LCGE	_	-arge-Cap Growth Funds	03/31/2000	636 1	ō	Growth & Income FNo Load	f No Load	0.89	50 SEC
112 BlackRock:Lg Cp Gr,Inst	LCGE	_	_arge-Cap Growth Funds	03/31/2000	1377.8	ග	Growth Funds	Institutional Load	0.81	60 PN
113 Berger Growth & Income	LCGE	Larg	e-Cap Growth Funds	03/31/2000	669.2	ত	Growth & Income I No Load	f No Load	1.35	173 BEC
114 AXP:New Dimensions;A	LCGE	Larg	e-Cap Growth Funds	03/31/2000	18540.4	O	Growth Funds	Front-End Load	0.86	
115 AXP. Growth Fund; A	LCGE	_	e-Cap Growth Funds	03/31/2000	6837.1	ග	Growth Funds	Front-End Load	0.89	17 IND
116 Atlas: Gro & Inc; A	LCGE	_	Large-Cap Growth Funds	03/31/2000	465.5	ত	Growth & Income I No Load	f No Load	1.06	106 ASC
117 Armada.Equity Gro;I	LCGE	Larg	e-Cap Growth Funds	03/31/2000	1361.7	ග	Growth Funds	Institutional Load	0.92	57 AEC
118 Arbor:OVB Cap App;A	LCGE	Larg	e-Cap Growth Funds	03/31/2000	1785	Ø	Growth Funds	Institutional Load	1.02	74 OC
119 Arbor: GoldenOak Gro, Inst	LCGE	Larg	le-Cap Growth Funds	03/31/2000	73.1	O	Growth Funds	Institutional Load	1.08	71 GD(
120 Amer Cent: AC Ultra; Inv	LCG	Larg	e-Cap Growth Funds	03/31/2000	46185.5	ග	Growth Funds	No Load	~	
121 Amer Cent: AC Growth; Inv	E00E	Larg	le-Cap Growth Funds	03/31/2000	10801.4	<b>O</b>	Growth Funds	No Load	-	92 TW
122 Alliance Premier Gr,A	LCGE	Larg	e-Cap Growth Funds	03/31/2000	5564.4	ග	Growth Funds	Front-End Load	1.5	
123 Allg/Mont&Caldwell Gro;N	LCGE	_	_arge-Cap Growth Funds	03/31/2000	1654.2	ტ	Growth Funds	No Load	1.05	32 MC
124 Allg/Chicago Gro & Inc	LCGE	_	_arge-Cap Growth Funds	03/31/2000	552.8	ō	Growth & Income I No Load	f No Load	1.06	29 CHI
125 Alger Ret Growth	LCGE	_	e-Cap Growth Funds	03/31/2000	107.1	O	Growth Funds	Institutional Load	1.11	130 ALG
126 Alger Ret: Cap Apprec	H001	Larc	e-Cap Growth Funds	03/31/2000	297.9	გ	Capital Appreciat	Sapital Appreciatic Institutional Load	1.44	177 ALA
127 AIM Eq:Wngarten;Rtl A	LCGE	Lar ar	e-Cap Growth Funds	03/31/2000	10778.9	ഗ	Growth Funds	Front-End Load	1.03	
128 AIM Eq. Charter, Rtl A	LCGE	_	Large-Cap Growth Funds	03/31/2000	6198.2	ত	Growth & Income	Srowth & Income FFront-End Load	1.05	107 CH1
129 AIM Eq. Blue Chip; Rtl A	LCGE	Larç	e-Cap Growth Funds	03/31/2000	2930.5	ত	Growth & Income	Growth & Income FFront-End Load	1.19	22 ABC
130 Aetna: Growth; I	LCGE	_	Large-Cap Growth Funds	03/31/2000	269.0	ഗ	Growth Funds	Institutional Load	0.94	142 AEC
131 Advantus Horizon;A	LCGE	_	Large-Cap Growth Funds	03/31/2000	72.1	O	Growth Funds	Front-End Load	1.3	60 AD!
132 Accessor Growth; Adv	LCGE	_	Large-Cap Growth Funds	03/31/2000	365.0	ග	Growth Funds	No Load	0.92	112 AGF
133 ABN AMRO. Growth, Com	LCGE		Large-Cap Growth Funds	03/31/2000	218.5	ග	Growth Funds	No Load	1.06	65 RG1
134										1
135  NE colortion #3 / Transform TD / ME colortion #1 / ME colortion #2 / ME colortion #3 / Transform TD /	, , ,	# cotton	11 / ME calaction	* / MF colection	#3 / Tracking	10		Possible method to 60 releation / 14   1		٠١
IN A P I I I AWARD A ISLE INITIA III	. Yes	* 1500000	X 1:11 Selection	10 300000 P. V 3	# N	< <u>'</u>		ייי אפופריוסוז / ויין ו		=

Fig. 6.4

102	PND DEL SBS COL. CIT CME SBS COL. CIT CME SBS BUR BBC FBB BLK BECK BECK BECK BECK BECK BECK BECK BEC	FOUNDERS ASSET MGMT INC DELAWARE MGMT CO INC SSB CITI FUND MANAGEMENT INC COLUMBIA FUNDS MGMT CO CITIBANK N.A CHASE MANHATTAN BANK SSB CITI FUND MANAGEMENT INC CHASE MANHATTAN BANK BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP C.2.11  C.2.11	000% • (2)  N -0 69% 0 10% 0 24% 0 24% 0 24% 1 95% 1 1 95% 1 1 7 2% 1 4 3%	0 4 85% 4 33% 4 86% 3 17% 3 17% 2 36%	P 3.96% 3.22% 1.94% 3.60% 2.45%	2.22% -0.97%	œ	8
102   103   104   105		M FOUNDERS ASSET MGMT INC DELAWARE MGMT CO INC SSB CITI FUND MANAGEMENT INC COLUMBIA FUNDS MGMT CO CITIBANK N.A CHASE MANHATTAN BANK SSB CITI FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MILTIJAL FUND GROUP	N -0 69% 0 10% 0 24% 0 24% 1 96% 1 38% 1 72%	0 4.85% 2 16% 4 33% 4 86% 3 15% 3 17% 3 16%	P 3.96% 3.22% 1.94% 3.60% 2.45%	Q 2.22% -0.97%	æ	,
100 100 110 110 100 100 100 100 100 100		M FOUNDERS ASSET MGMT INC DELAWARE MGMT CO INC SSB CITI FUND MANAGEMENT INC COLUMBIA FUNDS MGMT CO CITIBANK NA CHASE MANHATTAN BANK SSB CITI FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MILTIJAL FUND GROUP	N -0 69% 0 10% 0 10% 0 96% 0 24% 0 98% 1 96% 1 1.88% 1 1.43%	0 4.85% 2.16% 4.85% 3.17% 3.63% 2.36%	P 3.96% 3 22% 1.94% 3 60% 2 45%	Q 2.22% -0.97%	œ	
106 106 106 106 106 106 106 106 106 106		FOUNDERS ASSET MGMT INC DELAWARE MGMT CO INC SSB CITI FUND MANAGEMENT INC COLUMBIA FUNDS MGMT CO CITIBANK N.A CHASE MANHATTAN BANK SSB CITI FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MITUAL FUND GROUP	-0 69% 0 10% 0 24% 0 28% 1 96% 1 36% 1 43%	4.85% 2.16% 4.33% 3.52% 3.17% 2.36%	3.96% 3.22% 1.94% 3.60% 2.45%	2.22% -0.97%		
156 156 176 176 176 176 176 176 176 17		DELAWARE MGMT CO INC SSB CITI FUND MANAGEMENT INC COLUMBIA FUNDS MGMT CO CITIBANK N.A CHASE MANHATTAN BANK SSB CITI FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC IDS MUTUAL FUND GROUP IDS MUTUAL FUND GROUP	0 10% 0 96% 0 24% 0 98% 1 96% 1 72%	2 16% 4 33% 4 86% 3 17% 3 63% 2 36%	3 22% 1.94% 3 60% 2 45%	-0 97% -0 97%	3 34%	•
0.65 118 0.00 0.00 0.00 0.00 0.00 0.00 0.00	×	SSB CIT FUND MANAGEMENT INC COLUMBIA FUNDS MGMT CO CITIBANK N.A CHASE MANHATTAN BANK SSB CIT FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MUTUAL FUND GROUP	0 96% 0 24% 0 98% 1 96% 1 72% 1 43%	4 33% 4 86% 3 52% 3 17% 2 36%	1.94% 3.60% 2.45%	7510	4 72%	7.05%
0 68 118 55 118 105 118 105 118 105 118 105 118 105 118 119 119 119 119 119 119 119 119 119		COLUMBIA FUNDS MGMT CO CITIBANK N.A CHASE MANHATTAN BANK SSB CITI FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MUTUAL FUND GROUP	0 24% 0 64% 0.98% 1 95% 1 72% 1.43%	4 86% 3 52% 3.17% 3.63% 2 36%	3 60% 2 45%	2.51%	3.97%	3 69%
105 105 106 108 108 108 108 108 108 108 108 108 108		CITIBANK N.A CHASE MANHATTAN BANK SSB CIT FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MILITIAL FUND GROUP	0.98% 0.98% 1.95% 1.72% 1.43%	3.52% 3.17% 3.63% 2.35%	2.45%	1 40%	2 26%	3 78%
0.89 0.89 0.89 0.89 0.81 0.81 1.35 1.35 1.06 0.89 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06		CHASE MANHATTAN BANK SSB CIT FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP	0.98% 1.95% 1.88% 1.72%	3.17% 3.63% 2.36%		1 06%	3 22%	1 58%
0.68 0 1.3 55 1.3 55 0.89 50 0.81 60 1.35 173 0.86 34 0.89 17	×~×	SSB CIT FUND MANAGEMENT INC BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP	1 95% 1.88% 1 72% 1.43%	3.63% 2.36%	2.65%	1.12%	2.46%	4.60%
1.3 55 1.3 55 1.3 56 0.89 50 0.81 60 1.35 173 0.86 34 0.89 173	~~×~×	BURNHAM ASSET MGMT CORP BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP	1.88% 1.72% 1.43%	2 36%	2.82%	1.61%	3.82%	4.66%
0.89 50 0.89 50 0.81 60 1.35 173 0.86 34 0.89 17	. ~ × ~ ×	BRIDGEWAY CAPITAL MGMT BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MITHAL FUND GROUP	1 72% 1.43%	1020	1.15%	2.25%	274%	1 71%
0.89 50 0.81 60 1.35 173 0.86 34 0.89 17	× × ×	BANKBOSTON N.A. BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MITHAL FUND GROUP	1.43%	4.5.70	4.28%	1.46%	0.99%	3.29%
0.81 60 0.81 60 1.35 173 1.36 173 0.89 17 0.92 67	<>	BLACKROCK INC BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MITHAL FUND GROUP		4 52%	2.36%	2.82%	4.29%	3 54%
1.35 173 1.35 173 1.86 34 1.06 106 1.06 106	×	BERGER ASSOCIATES INC IDS MUTUAL FUND GROUP IDS MITHAL FUND GROUP	%09 O	4.37%	3.90%	201%	2.51%	4.19%
0.86 34 0.89 17 1.06 106 0.92 57		IDS MUTUAL FUND GROUP	-2.15%	2.67%	1.86%	3.42%	2.39%	2 94%
0.89 1.06 1.06 1.05 57		IDS MUTUAL FUND GROUP	0.53%	3.67%	3.03%	308%	2.86%	4.69%
1.06 106 0.92 57			0.00%	4 58%	4.15%	2.43%	1.57%	7.60%
0 92 57		ATLAS ADVISERS INC	-0.52%	4.16%	4.46%	151%	1.28%	4.33%
		NATIONAL CITY BANK	2.03%	2.43%	1.65%	1.89%	2 93%	2.98%
1.02 74		ONE VALLEY BANK N.A.	-1.62%	4.49%	2.00%	2.68%	4.01%	6.43%
1.08 71		CITIZENS COMMERCIAL & SAVINGS	0 54%	1.87%	2 29%	1 28%	2 52%	4 13%
1 42	TWCUX ACI	AMERICAN CENTURY INV INC	-2.96%	4.44%	3 21%	2 83%	2.00%	9 82%
-		AMERICAN CENTURY INV INC	-1.76%	3 42%	4.31%	3.78%	3 15%	4 70%
15 75 APGAX		ALLIANCE CAPITAL MGMT LP	2.73%	3.11%	3 82%	4 10%	5 67%	7.61%
50		CHICAGO TRUST COMPANY	2.35%	2 60%	3 54%	3 48%	3.82%	5.95%
1.06		CHICAGO TRUST COMPANY	1.68%	3 79%	1.57%	2 78%	2.88%	3.70%
1.11 130		ALGER FRED MANAGEMENT INC	-1 67%	5.08%	2.85%	2 07%	3.42%	9.81%
1.44 177	ALARX ALG	ALGER FRED MANAGEMENT INC	-3 17%	8.87%	6.79%	6 18%	4.11%	14.21%
1.03 124	WEINX AIM	AIM ADVISORS INC	-0 72%	5.10%	4.10%	2 60%	3.19%	6.23%
1.05 107		AIM ADVISORS INC	1.11%	3.65%	4.23%	2 94%	3.51%	4.25%
1.19 22	ABCAX AIM	AIM ADVISORS INC	2.70%	2.89%	3.21%	3.21%	2.26%	2.76%
0.94 142	AEGRX AET	AETNA LIFE INS & ANNTY	0.10%	2.96%	4.17%	2.40%	3 13%	5.90%
1.3 60	ADIOX ADS	ADVANTUS CAPITAL MGMT	1.49%	3.52%	2.04%	0.72%	2 10%	4.48%
112	v	ACCESSOR CAPITAL MGMT LP	2 30%	3.61%	2.98%	3.77%	4 31%	3.05%
1.06 65	RGTCX ABN	ABN AMRO ASSET MGMT INC	0.87%	4 85%	2.39%	2 52%	3.59%	4.14%
134						•	,	
135	Shows / Microb	colorina #1 / ME colorina #2 / ME colorina #3 / Trankina TD	□、	.70% 3.63% 2.94% Possible method to AC selection	2.94%	7.31%   <b>4</b>	3.12%	5.14 %4.0
A P PI / rawdata Alst Zidila inters A in	III Y III SON		<			-		=

Fig. 6.5

Colored   Col	off E	75	7 11 11 11 11 11					X 2
10.00   0.00	음. 전 등 전		Window Heip					<b>V</b>
N         0.0466         0.0366         0.0178         0.0366 <th>N105</th> <th>0.24%</th> <th>1 P</th> <th>27 A7 E8 E8 42 47</th> <th></th> <th></th> <th></th> <th></th>	N105	0.24%	1 P	27 A7 E8 E8 42 47				
Q24         (10,048)         0.10.68         0.10.48         0.0.039         0.0.039         0.0.039           Q054         (10,048)         0.10.68         0.10.14         0.0.025         0.0.046         0.0.043           P189         0.10.583         0.0.015         0.0.046         0.0.046         0.0.046         0.0.043           1172         0.10.473         0.0.078         0.0.016         0.0.048 <t< th=""><th>Z</th><th>0</th><th><u> </u></th><th>O</th><th>~</th><th>S</th><th></th><th>11.</th></t<>	Z	0	<u> </u>	O	~	S		11.
December   Dicase	105 0.0024	0.0486	0.036	0.014	0.0226	0.0378	0.0395	ī
10.000   10.00	106 0.0064	0.0352	0.0245	0 0 106	0 0322	0 0158	0.0316	
11199	107 0.0098	0.0317	0 0265	0 0112	0 0246	0.046	0.0454	
1188   10,0735   0,0115   0,01225   0,0274   0,0171   0,0189   1,0183   1,01735   0,0239	108 0.0195	0.0363	0.0282	0.0161	0 0382	0.0466	0.0403	
11.72   0.0.0437   0.0.0438   0.0.0448   0.0.0599   0.0.0329   0.0.0431   0.0.0431   0	109 0 0188	0.0236	0.0115	0.0225	0.0274	0.0171	0.0169	
1143 10 0462 10 0236 0 10 034 0 10 034 0 10 039 0 10 034 0 10 039 0 10 034 0 10 039 0 10 034 0 10 039 0 10 034 0 10 039 0 10 034 0 10 039 0 10 037 0 10 038 0 10 034 0 10 039 0 10 037 0 10 038	110 0.0172	0.0437	0.0428	0.0146	0.0099	0.0329	0.0439	
0.0267 0.0287 0.0389 0.0227 0.0239 0.0498 0.0234 0.0238 0.0239 0.0239 0.0389 0.0389 0.0389 0.0389 0.0389 0.0389 0.0389 0.0389 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0048 0.0048 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0048 0.0048 0.0048 0.0058 0.0048 0.0048 0.0028 0.0048 0.0048 0.0028 0.0048 0.0048 0.0028 0.0048 0.0048 0.0028 0.0048 0.0048 0.0028 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0.0048 0.0058 0	111 0.0143	0.0452	0.0236	0.0282	0 0429	0.0354	0.0693	
Ω275         0.0267         0.0166         0.03342         0.0229         0.0294         0.0379           D055         0.0367         0.0368         0.0368         0.0469         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.046         0.044         0.044         0.044         0.044         0.022         0.0416         0.043         0.043         0.043         0.044         0.044         0.044         0.044         0.044         0.044         0.043         0.044         0.043         0.044         0.043         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.041         0.058         0.043         0.058         0.043         0.058         0.043         0.058         0.043         0.058         0.044         0.058         0.044         0.058         0.044	112 0.006	0.0437	0.039	0.0201	0.0251	0.0419	0.0448	
0053 0.0369 0.0266 0.0469 0.0266 0.0469 0.0469 0.0623 0.0623 0.0623 0.0243 0.0459 0.0459 0.0458 0.0523 0.0523 0.0046 0.0046 0.0046 0.0047 0.0076 0.00523 0.0041 0.0024 0.0046 0.0047 0.0023 0.0043 0.0048 0.0044 0.0024 0.0042 0.0042 0.0042 0.0042 0.0043 0.0043 0.0044 0.0023 0.0042 0.0042 0.0042 0.0042 0.0042 0.0043 0.0052 0.0043 0.0052 0.0043 0.0052 0.0043 0.0052 0.0043 0.0052 0.0043 0.0052 0.0044 0.0023 0.0044 0.0023 0.0044 0.0023 0.0044 0.0028 0.0044 0.0028 0.0044 0.0028 0.0044 0.0028 0.0044 0.0028 0.0044 0.0028 0.0044 0.0056 0.0056 0.0044 0.0056 0.0044 0.0056 0.0056 0.0044 0.0056 0.	113 -0.0215	0.0267	0.0186	0.0342	0.0239	0.0294	0.0379	
0062 00468 00446 00043 00165 0.0623 0.0623 0.0623 0.0623 0.0623 0.0623 0.0623 0.0623 0.0623 0.0648 0.0648 0.0161 0.0128 0.0248 0.0258 0.0258 0.025 0.0418 0.025 0.0267 0.025 0.0241 0.0224 0.025 0.0241 0.025 0.0241 0.025 0.0241 0.025 0.0241 0.025 0.0241 0.025 0.024 0.025 0.024 0.025 0.024 0.025 0.024 0.025 0.024 0.025 0.024 0.025 0.0	114 0.0053	0.0367	0.0303	0.0308	0.0286	0.0469	0.048	
0.0416 0.0446 0.0151 0.0128 0.0043 0.0601 0.00161 0.00243 0.00201 0.00243 0.00201 0.00243 0.00201 0.00243 0.00202 0.00249 0.0	1150	0.0458	0.0415	0.0243	0.0157	0.076	0.0623	
0.0243 0.0165 0.0189 0.0298 0.0298 0.0418 0.0044 0.002 0.0288 0.0261 0.0413 0.0735 0.0189 0.0288 0.0241 0.0735 0.0189 0.0288 0.0413 0.0735 0.0189 0.028 0.0413 0.0735 0.0189 0.028 0.0413 0.0736 0.0181 0.0281 0.028 0.0413 0.0598 0.0181 0.0281 0.0281 0.0382 0.0413 0.0382 0.0181 0.0281 0.0382 0.0414 0.0382 0.0182 0.0413 0.0382 0.0423 0.0382 0.0382 0.0183 0.0413 0.0284 0.0381 0.0381 0.0381 0.0285 0.0423 0.0294 0.0381 0.0381 0.0381 0.0385 0.0413 0.0381 0.0381 0.0381 0.0381 0.0385 0.0423 0.0324 0.0381 0.0381 0.0381 0.0386 0.0417 0.0381 0.0381 0.0381 0.0381 0.0387 0.0389 0.0321 0.0394 0.0394 0.0396 0.0414 0.0389 0.0229 0.0391 0.0391 0.0391 0.0391 0.0391 0.0380 0.0321 0.0328 0.0331 =AVERAGE(P12.P133) =AVERAGE(R12.R133) =AVERAGE(S12.S133) =AVERAGE(S12.S133) =AVERAGE(T12.T33) =AVERAGE(S12.S133) =AVERAGE(S12.S1	116 -0.0052	0.0416	0.0446	0.0151	0 0128	0.0433	0 0601	
0.0449	117 0.0203	0.0243	0.0165	0.0189	0 0293	0 0298	0.0418	
0.0187	118 -0.0162	0.0449	0.02	0.0268	0.0401	0 0643	0 0735	
0.0344 0.0321 0.0283 0.002 0.047 0.0508 0.034 0.0378 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0348 0.0368 0.0368 0.0368 0.0382 0.047 0.0568 0.0368 0.0368 0.0382 0.041 0.0382	119 0.0054	0.0187	0.0229	0.0128	0 0252	0 0413	0.0367	
0.0342	120 -0.0296	0.0444	0.0321	0.0283	0.02	0 0982	0.1057	
0.0311 0.0382 0.041 0.0567 0.0761 0.0556 0.0439 0.0381 0.0382 0.041 0.0567 0.0761 0.0556 0.0439 0.0382 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0388 0.0389 0.0379 0.0389 0.0578 0.0578 0.0389 0.0379 0.0579 0.0579 0.0578 0.0579 0.0389 0.0579 0.0389 0.0471 0.0289 0.0381 0.0389 0.0381 0.0389 0.0381 0.0389 0.0381 0.0389 0.0381 0.0389 0.0381 0.0389 0.0381 0.0381 0.0389 0.0381 0.0381 0.0389 0.0381 0.0381 0.0389 0.0381 0.0381 0.0389 0.0381 0.0	121 -0.0176	0.0342	0.0431	0.0378	0.0315	0.047	0.0508	
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0.001 0.0296 0.0417 0.024 0.0313 0.059 0.0521 0.0149 0.0352 0.0204 0.0072 0.021 0.048 0.0651 0.0149 0.0352 0.0204 0.0072 0.021 0.048 0.0651 0.023 0.0361 0.0298 0.0377 0.0369 0.0305 0.0334 0.0087 0.0485 0.0239 0.0252 0.0359 0.0414 0.0605 =AVERAGE(N12:N133) =AVERAGE(P12.P133) =AVERAGE(Q12:Q133)=AVERAGE(R12:R133) =AVERAGE(S12.S133) =AVERAGE(T12:T)  • IN \ rawdata \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	129 0.027	0.0289	0.0321	0.0321	0 022e	0 0276	0.0287	
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0.023 0.0361 0.0334 0.0339 0.0239 0.0359 0.0431 0.0305 0.0414 0.0334 0.0087 0.0485 0.0239 0.0252 0.0359 0.0414 0.0605 =AVERAGE(N12:N133) =AVERAGE(012:0133) =AVERAGE(P12.P133) =AVERAGE(012:0133) =AVERAGE(R12:R133) =AVERAGE(R12:R133) =AVERAGE(T12:T12:T12:T133) =AVERAGE(R12:R133) =AVERAGE(R13:R133) =	131 0.0149	0.0352	0.0204	0.0072	0 021	0 0448	0.0651	
0.0087	132 0.023	0.0361	0.0298	0.0377	0.0431	0.0305	0.0334	
=AVERAGE(N12:N133) =AVERAGE(012:0133)=AVERAGE(P12.P133) =AVERAGE(Q12:Q133)=AVERAGE(R12:R133) =AVERAGE(S12.S133) =AVERAGE(T12:133) =AVERAG	133 0.0087	0.0485	0.0239	U.U.252	10.U369	0.0414	0.0605	
=AVERAGE(N12:N133) =AVERAGE(V12:V133)=AVERAGE(P12.P133) =AVERAGE(G12:Q133)=AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(I12:R133) =AVERAGE(I12:R133) =AVERAGE(I12:R133) =AVERAGE(I12:R133) =AVERAGE(S12.S133) =AVERAGE(I12:R133) =AVERAGE(I12:R133) =AVERAGE(S12:S133) =AVERAGE(I12:R133) =AVERAGE(S12:S133) =AVERAGE(I12:R133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:R133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:S133) =AVERAGE(S12:R133) =AVERAGE(S12:R	134							i
> )\ rawdata \1st 2 fund filters \( \text{ WF selection #1 \( \text{ MF selection #2 \( \text{ MF selection #3 \( \text{ Tracking TR \( \text{ Possible method to AC selection \( \text{       } \)	135 =AVERAGE(N12:N133	)) =AVERAGE(012:0	0133)=AVERAGE(P12.F	133) =AVERAGE(G12:G13:	))=AVERAGE(R12	:R133) =AVERAGE(S12	2.S133) =AVERAGE(T1	2:113:
> >  rawdata \1st 2 fund filters \ MF selection #1 \ MF selection #2 \ MF selection #3 \ Tracking TR \ Possible method to AC selection \   4	136							
> N   rawdata   1st 2 fund filters   MF selection #1     MF selection #2   MF selection #3   Tracking TR     Possible method to AC selection     4	138							1
	_		tion #1 / MF selection #2	🔾 MF selection #3 🗴 Tracking TI	R 人 Possible metho	d to AC selection /   ◀		Ė

Fig. 6.6

X @ =	N N 0 N 0 N 0 N 0 N 0 N 0 N 0 N N 0 N N 0 N N 0 N N N 0 N	WT:W/ilm I Wp Stewa WM:Growt Wilshire T(White Oak WellsFargi Vanguard I Vanguard I V LCGE LCGE LCGE LCGE LCGE LCGE LCGE LCGE			2.05% 2.80%	3.59% 2.50% 3.01% 3.00% 3.00% 3.00%	2.62% 3.70%	3.11%	7.06% 4.90% 2.11% 3.24%	0.91% -0.37%	4.91% 4.24% 5.63% 4.88% A.D.S3.08% 2.36% 0.83%	2.03% 3.93%	-3.09% 0.30%	3.41% 2.64% 4.03% 3.79% a 57% 4 68% a 77% n 9n%	1.13% -0.32%	4.10% 1.84%	4 48% 3.18% 2 93% 3 60% ▼ lection /   4
	7. 4	tWilshire Tç W LCGE Li Large-Cap Li			2.81%	3.4U% %B6%			3.93% 2.91%		5.57%			3.72%			1.99% 4.39% 4.48% Possible method to AC selection
<b>₩</b>	ı	WM:Growt V LCGE L Large-Cap L				3.12%			5 /4% 6 6 49%		2.96%			6 2.34% 4 BE%			
- %001 & HA & W)	ee rate	IWp Stewa LCGE Large-Cap				% 2.43% % 2.15%			% 3.53% 4 1.68%	-	% 4.12% % 50%		·	% 4.18% % 0.50%			% 4.65% Tracking TR <i>A</i>
Tyludow Help & A Z 1 Z 1 Z 1 Z 1 Z 1 Z 1 Z 1 Z 1 Z 1 Z	Iculating total returns net of F G the risk-free rate				0.40%	3.88% %2.00	1.92%	0.61%	6.10% 7.18%	1.28%	2.62%	%, #6.D- 3.67%	-0.19%	%25.0- %33.4	2.60%	5.65%	3.05% 4.65% 3.05% 4.65% 1.542 fund filters \ \text{MF selection #2 \ \text{/ MF selection #3 \ \text{/ Tracking TR \ \text{/}}
	sheet is for ca D E I returns net of	LCGE LCGE Large-Cap Growth Funds minus Average risk-free Equal Wtd rate			0 23%	3 15%	2.45% 1.83%	2 64%	4.67%	0.05%	2.89%	-1.28% 2.62%	-0.85%	2.04%	1.97%	2.81%	2.55% MF selection #
xcei - Patent #4 [KLS example] <u>View Insert Format Iools Data</u> △ No Web Men Cols	n la mas control la This worksheet is C D Iculating total returns	LCGE LCG Large-Cap Larg mini Average risk Equal Witd rate			0.70%	3.63%	2.34%	3.12%	5.14%	5.22% 0.50%		-0.85% 3.06%	·		2.39%		2.96% fund filters
v Insert Form	B Bet is for calc	1 month L T-Bill L risk-free A			0.47%	0.48%	0.48%	0.47%	0.48%	0.45%		0.44%			0.42%		data A
** Iniciosoft Extent Fatent and Inc. Examples  ** Iniciosoft Edit View Insert Format Tools Data  ** Initial In	¬   ¬¬	26 4 4 3 7 7 8	0 6 1 1 1 2 1	ត្ <u>ម</u> ក្រុ	18 01/31/1995		20 03/31/1995			24 U//31/1995		27 10/31/1995		_		32 03/31/1996	34 05/31/1996  ▲ ◆ ▶ N \ rawdata

Fig. 7.1

X X	4	to Co mit rist		i		× ×	2 %	% %	2 ×2	× >	₹ %	×.	× ×	٠.	%	× :	1 k 2s	· <u>_</u>
L L	3	Vanguarr LCGE Large-Ca minus risk-free				2.33%	1.90%	3.22%	2.48%	1.65%	5.18%		3.49%	3.60%		0.73%	1.43%	7
1 1	ī	WellsFargi LCGE Large-Cap minus risk-free				1.58% 2.02%	2.49%	2.14%	6.77%	4.44%	3.79%	-3.52%	1.59%	2.21%	4.26%	0.72%	3.65%	
H.	i i	White Oak V LCGE L Large-Cap L minus n risk-free ri				1.49%	2.47%	3.75%	7.05%	6.60%	4.46%	4.62%	1.55%	2.98%	3.25%	-3.10%	4.35%	₹ <u>*</u>
	}	Wilshire T(W LCGE L Large-Cap L: minus m risk-free ris				2.34%	2.38%	1.67%	3.46%	2.44%	5.12%	0.08%	3.31%	9.26% 8.29%	1.13%	-0.14%	2.03%	lection /
C L	3	WM:Growt W LCGE L( Large-Cap La minus m misk-free ris				0.64%	1.56%	2.96%	5.27%	6.03%	2.51%	-3.12%	4.02%	1.91%	4.43%	0.32%	4.97%	4.23% 1.57% 5.57% Possible method to AC selection ,
<b>®</b> □		Wp Stewa W LCGE L( Large-Cap La minus m risk-free ris				2.52%	1.68%	2.13%	3.06%	1.22%	3.67%	2.25%	3.90%	3.75%	0.27%	-0.05%	3.88%	4.23% Possible me
• M 100% •	5	AIM Eq:W AIM Eq:Cr AIM Eq:Cr All Eq:Bli Aetna:Gro Advantus F Accessor; ABN AMRO:Growth; CWT:Will IWp Stewa WM:Growt Wilshire Tţ White Oak WellsFargr Vanguard IVa LCGE LCGE LCGE LCGE LCGE LCGE LCGE LCGE				-0.07%	1.74%	1.44%	U.14% 5.63%	6.72%	0.82%	4.38%	3.23%	-1.63%	4.14%	2.19%	5.24%	1.97% 2.64% (AF selection #3 / Tracking TR /
	70	):Growth;C Growth Fui																/ £# voto
	UY 122	BN AMRC CGE arge-Cap				0.87%	2.39%	2.52%	3.59%	6.05%	0.73%	-2.21%	2.28%	0.08%	1.02%	0.36%	•	1.97% X MF sele
ow Help	121	cessor:1Ai GE L( rge-Cap La				230%	3.61% 2.98%	3.77%	4.31% 3.05%	3.34%	-0.84%	1.35%	2.79%	-0.20% -0.20%	1.87%	-0.57%	2.33%	1.45% election #2
unting Windo	DW 120	vantus I Ac GE LC rge-Cap La				1.49%	2.52%	0.72%	2.10%	6.51%	-0.15%	. 1. 25. 28. 28. 28.	6.01%	-0.90% -0.90%	1.56%	0.09%	2.65%	2.95% n#1 / MF:
e) Accor	V 119	tna:GrovAd GE LC rge-Cap La				0.10%	2.96% 4.17%	2.40%	3.13% 5.93%	6.21%	2.17%	5 E E E	3.49%	-1.23%	3.75 2.78 2.78 2.78	0.46%	3.54%	2.26% 3.34% 2.38% 2.95% 1.45% 1.st 2 fund filters \mfr selection #1 \langle MF selection #2
(RCS example) net Iools Deta lib (2) <li>116</li>	DU 118	/ Eq:BlrAe GE LC ge-Cap La				2.70%	2.89% 3.21%	3.21%	2.26% 2.76%	2.87%	-0.83%	4.66%	3.98%	1.33%	7.74% 2.59%	1.42%	1.88%	3.34% and filters
	DT 117	AIM Eq:W AIM Eq:Ct AIM Eq:B LCGE LCGE LCGE Large-Cap Large-Cap Large-Ca				1.11%	3.65%	2.94%	3.51%	4.90%	1.07%	4.63%	3.01%	-0.39%	2.01%	2, 26, 0	2.41%	2.26% ta Á 1st 2 fi
e Edit Yew  The Edit Yew  The Edit Yew	116 116	1 Eq:W Allv 3E LCi 3e-Cap Lar				-0.72%	5.10%	2.60%	3.19%	7.27%	0.60%	3.84%	2.31%	-1.46%	1.30%	0.97%	2.51%	1.88% N\rawdata
N Micros	. —	3 AIM 5 LCG 7	<b>∞</b>	5 5 7	5 5 1	<u>&gt;</u> 8	<u>6</u> £	₹ ₹	88	3 7	ĸ				<del>중</del> 8	<del>-</del> 6	8 8	중 <u>*</u>

Fig. 7.2

×	4	د م	-
X Eb		th, Cor	-
	$\overline{\Omega}$	Growth	
		AMRO Cap G	0.40% 4.37% 1.91% 2.04% 3.12% 3.12% 0.27% 2.55% 0.06% 1.55%
	뜨	ABN AM LCGE Large-Ci minus risk-free rate	
	<u>o</u>	issor.∣ 9-Cap is free	1.83% 3.13% 3.250% 3.29% 3.84% 2.58% 2.58% 1.92% 1.92% 1.92% 1.92% 1.92%
	<u> </u>	HAccessor LCGE Large-Cs minus risk-free rate	~
	<u>a</u>	Advantus LCGE Large-Car minus risk-free rate	1 02% 3 04% 1 .56% 0 .24% 4 01% 4 01% 1 .35% 1 .35% 1 .25% 2 .24% 2 .24% 2 .23% ection /
		o Advantu LCGE ip Large-C minus risk-free rate	1.37% 2.48% 1.92% 2.66% 5.43% 5.75% 1.71% 1.71% 1.67% 1.67% 1.67% 1.96% 0.05%
	<u>o</u>	Aetna:Gi LCGE Large-Ca minus risk-free rate	-0.37% 2.48% 3.69% 1.92% 2.66% 5.43% 1.71% 1.71% 1.25% 1.25% 1.28% 1.28% 1.28% 1.28% 1.28% 1.28% 1.28% 1.96% 1.96% 1.96% 1.96%
-		Blu Aetn LCGi ap Larg minu risk-i rate	2.23% -0.37% 1 029 2.41% 2 48% 3 049 2.73% 3.69% 1.569 1 79% 2 66% 1 639 2.29% 5.43% 4 019 2.41% 5.75% 6 055 4.21% 0.43% 1.35 -1.28% 1.71% -0.619 3.54% 3.05% 5.57 1.01% 0.65% 1.22 2.17% 3.43% 1.22 2.17% 3.43% 1.22 2.17% 3.43% 2.24 2.92% 1 96% 2 53 Possible method to AC selectron
<b>₽</b>	Z	AIM Eq I LCGE Large-Ca minus nsk-free rate	
• %001 🐠 🖽		Cap Co as a control of the control o	0.64% 3.75% 3.75% 3.04% 4.44% 4.18% -0.61% 1.58% 1.58% 1.84% 1.84%
\$	Σ	AIM Eq. ( LCGE Large-Ca minus risk-free rate	0. W. W. C. W. W. A. D. A. C.
<b>⊞</b>		Cap	3.54% -1.19% 0.64% 6.31% 3.62% 3.17% 5.70% 2.12% 2.46% 3.64% 13.74% 5.72% 3.04% 13.36% 6.81% 4.44% 1.01% 0.14% 0.61% 2.37% 3.39% 4.18% 6.15% -2.79% 0.51% 3.73% 1.30% 0.83% 1.35% 3.73% 1.56% 3.73% 1.46% 1.
<b>₩</b>	=	(AIM Eq.\ LCGE Large-Ca minus risk-free rate	eles
†¥ †2 †¥ Z	≍	Alger Ret LCGE Large-Cap minus nsk-free rate	3.64% 6.319% 6.319% 13.74% 1.01% 2.37% 6.0.05% 3.14% 7.69% 7.69% 7.69% 7.69%
*		t:(Alger R LCGE pp Large-C minus risk-frei rate	
Accounting Window Help	2	Alger Re LCGE Large-Cs minus risk-free rate	39% 1.21% -2.14% 1.09% 2.37% 4.60% 2.30% 4.59% 3.33% 9.34% 9.3% 2.41% 2.95% 9.34% 9.3% 2.41% 9.34% 9.35% 1.12% 1.12% 1.12% 1.10% 0.28% 1.51% 1.72% 1.50% 1.51% 0.25% 4.6% 0.36% 1.51% 0.25% 4.68% 0.36% 1.51% 0.25% 4.6% 0.36% 1.51% 0.25% 4.6% 0.36% 1.51% 0.25% 4.6% 0.36% 1.51% 0.35% 1.51% 0.35% 1.51% 0.35% 1.51% 0.35% 1.51% 0.35% 1.51% 0.36% 0.36% 1.51% 0
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unting	=	Allg/Chic LCGE Large-Cc minus isk-free rate	too
		Aont8 A	
s Data	E	Allg/Mo LCGE Large-C minus risk-free rate	~
Format Iools Data	<u>o</u>	Cap Se	3% 2.26% 4% 2.63% 334% 3.62% 362% 37% 5.20% 37% 5.10% 6% 4.77% 14% -0.31% 6% 3.03% 6% 3.03% 6% 2.42% 6% 3.23% 6% 2.42% 6% 2.42% 6% 2.42% 6% 2.42%
Fgrma ≫	n =	nt Alliance LCGE p Large-Cominus risk-free	<u>ت</u> ۷
yjew Insert		f Amer Cer LCGE Large-Cal minus risk-free rate	
yiew (g)	-	ent Ame LCG ap Larg min risk-	3.43% -2.22 3.96% 2.93 2.35% 3.8 10.13% 4.2 10.11% 4.6 10.62% 2.7 0.46% 3.4 0.62% -1.4 0.52% -1.4 0.52% -1.4 0.53% 1.2 4.53% 3.0 4.37% 3.0 1.2 4.36% 2.7
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Fig. 7.3

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	5.42%					6.37%	5.20%	5.88%	4.97%	3.05%	6.97%	3.60%	5.08%
	-3.68%	-4.09%				-5.51%	-3.18%	-2.78%	-4.66%	-7.92%	-3.77%	-1.91%	-2 99%
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0.43%	1.11%	0.68%				1.89%	1 99%	-1.07%	0.71%	-1.06%	1.72%	1.48%	1.20%
0.43%	1.48%					%68 O-	3.73%	3.10%	3 09%	5.69%	2 63%	2.89%	3.37%
0 42%	7.83%					9.35%	8.89%	9.36%	8.61%	10.57%	7.93%	7.82%	6.91%
0.43%	4.58%	4 15%				3 15%	5.07%	4.81%	3.69%	0.38%	2.58%	4.11%	5.14%
	1.59%					0.92%	-2.47%	3.76%	0.38%	4.61%	2.61%	2.38%	0.84%
	-2.65%	-3 07%				-5.02%	-2.58%	-3.05%	-2.41%	-5.05%	-3.22%	-1.53%	-2.01%
0.42%	6.25%	5.83%				5.02%	7.56%	9.42%	7.21%	7.56%	9.11%	6.40%	7.13%
0.42%	-0.70%	-1.11%				-2.29%	-0.36%	-0.43%	%09 <sup>-</sup> 0-	0.27%	0.21%	-0.59%	-0.04%
0.41%		-16.87%				-16.85%	-14.70%	-17.08%	-13.55%	-23.50%	-16.69%	-14.12%	-13.04%
0.41%	7.50%	7.09%				7.83%	8.36%	12.07%	7.17%	5.52%	9.40%	6.09%	6.70%
		5.92%				7.97%	3.67%	3 28%	8.05%	14.99%	7.34%	7.02%	8.41%
		6.63%				5.14%	7.23%	6.75%	7.18%	9.78%	9.53%	7.25%	6.78%
						10.41%	6.76%	18.39%	8.21%	8.94%	11.98%	8.67%	7.67%
						3.90%	5.80%	13.25%	6.29%	14.59%	8.18%	5.41%	6.16%
						-4.08%	-0.96%	-331%	-3.69%	-5.81%	-4.20%	-4.93%	-3.93%
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		-0.15%				-0.37%	-1.27%	5 09%	-0.06%	-1.72%	0 44%	-0.80%	-0.21%
0.36%	-3.30%	-3.66%				-2.75%	-6.10%	-561%	-3.22%	-2.50%	-3 50%	-3.34%	-2.95%
	7.29%	6.92%				8.74%	5.95%	8.01%	7.01%	10 80%	8 83%	7.37%	7.28%
0.38%	-3.16%					-3.49%	-5.44%	-3.93%	-3.19%	-3.64%	-4.86%	-3.62%	-3.15%
0.38%	0.38%					0.60%	0.20%	2.77%	2.54%	2.44%	0.25%	0.78%	1.33%
0.40%	-0.85%	-1.25%				-1.20%	-0.84%	4.89%	-2.42%	-0.80%	-3.79%	-1.98%	-1.69%
0.39%	7.09%	869.9				8.22%	7.08%	7.41%	8.00%	10.51%	8.63%	8.65%	6.90%
0.41%	5.61%	5.21%				7.37%	-0.60%	10.94%	3.00%	5.31%	3.68%	3.28%	4.28%
0.42%	11.94%	11.52%				21.69%	4.67%	19.74%	11.62%	8 83%	11.00%	7.08%	7.79%
0.44%	-3.84%	-4.27%				-4.91%	-4.63%	0.17%	-6.83%	1.00%	-2.54%	-5.56%	-6.67%
0.45%	6.81%	6.37%				14.14%	-4.96%	12.27%	3.47%	9.14%	1.88%	2.14%	2.07%
0.46%	5.61%	5.14%				2.80%	14.63%	. 1.75%	8.21%	8.98%	11.80%	9.03%	9.21%
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Fig. 7.4

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		1.62%	-1.18%	3.96%	0.68%	0.82%		1.46%	1.56%	-1.50%	0.28%	-1.49%	1.29%	1.05%	
		1.22%	1.67%	0.70%	3.57%	1.58%		-1 32%	3.30%	2.67%	2.66%	5.26%	2.20%	2.46%	
		6.87%	9.11%	7 41%	7.25%	8.67%		8.93%	8.47%	8.94%	8 19%	10.15%	7.51%	7.40%	
		4.60%	5.96%	4.51%	4.50%	4.50%		272%	4.64%	4.38%	3 26%	-0.05%	2.15%	3.68%	
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		-2.31%	-2.86%	-2.20%	-1.16%	-2.32%		-5 44%	-3.00%	-3.47%	-283%	-5 47%	-3.64%	-1.95%	
9 5.18%		4.65%	5.06%	8.24%	7 93%	5.96%		4 60%	7.14%	800.6	6.79%	7.14%	8.69%	5.98%	
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			5 54%	6.62%	7.31%	7.51%		4.80%	6.89%	6.41%	6.84%	9.44%	9.19%	6.91%	
			12.90%	8.35%	10.89%	10.13%		10.04%	6.39%	18.02%	7.84%	8.57%	11.61%	8.30%	
			6.23%	3.21%	7.34%	1.70%		3 54%	5.44%	12.89%	5.93%	14.23%	7.82%	5.05%	
7 -4 90%			-4.66%	-5.71%	-4.19%	-3.45%		-4 44%	-1 32%	-3.67%	-4 05%	-6.17%	-4.56%	-5 29%	
			5.59%	5.46%	6.09%	2.62%		3.63%	0.58%	11.78%	4.74%	5.16%	5.84%	3.22%	
9 -0.30%	1.43%		0.33%	-0.19%	-1.21%	1.39%		-0.73%	-1.63%	4.73%	-0.42%	-2.08%	0.08%	-1.16%	
			-2.43%	-3.70%	-4.14%	-3.09%		-3 11%	-6.46%	-5.97%	-3.58%	-2.86%	-3.86%	-3.70%	
			8.78%	8.22%	6.35%	7.09%		8.36%	5.57%	7.63%	6.63%	10.42%	8.45%	6.99%	
	3.75%		-1.08%	-3.30%	-3.55%	-5.43%		-387%	-5.82%	-4 31%	-357%	4.02%	-5.24%	-4.00%	
			-0.27%	1.19%	-0.10%	-2.01%		0.22%	-0.18%	2.39%	2.16%	2.06%	-0.13%	0.40%	
			-2.23%	-1.57%	-1.81%	-2.66%		-1 60%	-1.24%	4.49%	-2.82%	-1.20%	-4.19%	-2.38%	
	3% 5.93%	7.02%	4.74%	5.28%	7.29%	8.31%		7.83%	6.69%	7.02%	7.61%	10.12%	8.24%	8.26%	
		3.23%	4.26%	4.35%	3.24%	2.12%		6.96%	-1.01%	10.53%	2.59%	4.90%	3.27%	2.87%	
	5% 11.50%	8.63%	12.62%	10.26%	9.29%	6.65%		21.27%	4.25%	19.32%	11.20%	8.51%	10.58%	6.66%	
			-4.45%	-5.10%	-6.81%	-5.79%		-5 35%	-5.07%	-0.27%	-7.27%	0.56%	-2.98%	-6.00%	
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Fig. 7.5

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				<u>o</u> !	4.71%	-3.7.%	4.99%	0.25%	3.14%	6.83%	4 07%	-0.58%	-1.58%	7.51%	-0.54%	-14.08%	7.36%	6.88%	6.97%	10.52%	6.98%	-4.55%	5.72%	-1.57%	-4.50%	5.97%	-3.93% -0.93%	-U.48%	-2.21%	6.9U%	2.83%	8.87%	-7.25%	2.25%	7.55%			<u>-</u>	-
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		49 100% ⋅		Σ	5.53%	-4 83%	31%	-0 16%	0 22%	5.79%	4 21%	-0 49%	-3 12%	4.54%	-0 28%	-16.77%	4.78%	7 99%	6.19%	8.83%	4 94%	-4.12%	6.41%	107%	-3 05%	6 88% 6 88%	-4 13%	-0.44%	-1.68%	5.54%	3.79%	11.08%	-4 12%	2.93%	8 29%			racking TR 7	
				_	573%	-4.91%	1.44%	0.32%	0.32%	7 21%	3.74%	1.32%	-2.48%	4.76%	-0.93%	-17.27%	5.70%	4.96%	7.07%	12.78%	5.64%	-5.26%	5.63%	%99 C	-2.06%	6 62%	3.08%	-1.01%	0.38%	4.11%	6.44%	10.23%	-4.06%	14.89%	1.81%			+100 #3 / 1	<
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ample)		<b>\$</b>	-\$850	エ	4.63%	-3.65%	1.49%	1 12%	1.81%	8.25%	1.39%	2.77%	-2.63%	5.71%	-2.29%	-15.71%	2.75%	9.30%	6.61%	7.84%	5.47%	-3.83%	5.21%	-1 33%	-2.19%	4.22%	-2.29%			7.00%	4.75%				7.29%			\ ME coloc	Al'II seier
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crosoft Exc	File Edit Vie		1550	H	5.16%	<b>.6</b> .66%	1.65%	0.85%	1.33%	7.03%	5.60%	1.03%	-2.13%	6.84%	0.23%	-18.67%	6.81%	3.63%	5.84%	11.02%	6.70%	-3.10%	5.55%	-0.88%	-2.90%	4.77%			-1.53%		4.70%	•	-6.75%		9.39%				
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Fig. 7.6

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Fig. 7.7

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minus         minus         minus         minus         minus           risk-free         risk-free         risk-free         risk-free         risk-free           riale         rate         risk-free         risk-free         risk-free           riale         riale         risk-free         risk-free         risk-free           riale         riale         riale         riale         riale           riale         riale         riale         riale         riale         riale           riale         riale         riale         riale		뫆	9	g)=	=K5	31=	=M5	SN=
Table   Tabl		minus	minus	minus	snuim	minus	minus	minus
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Fig. 7.8

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22 05/3	05/31/1995	2.64%	0.14%	2.64%	3.32%	3.34%	4.57%	2.64%	3.04%	3.09%	2.48%	1.04%	2.08%	1.54%
	06/30/1995	4.67%	5.63%	3.06%	5.27%	3.46%	7.05%	6.77%	2.48%	3.30%	6.28%	3.26%	8.66%	7.55%
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_	08/31/1995	0.05%	0.82%	-2.30%	0.27%	-0.34%	1.59%	0.45%	-0.83%	-0.77%	33% 0000	0.90%	0.24%	0.00%
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_	01/31/1996	2.04%	-1.00%	3.75%	1.91%	3.29%	2.98%	2.21%	3.60%	3.36%	3.89%	2.18%	1.60%	2.22%
_	02/29/1996	1.97%	4.14%	0.27%	4.43%	1.13%	3.25%	4.26%	2.65%	0.48%	2.67%	3.01%	1.02%	0.64%
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Fig. 8.1

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Fig. 8.2

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Fig. 8.3

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Fig. 8.4

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Fig. 8.5

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Fig. 8.6

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Fig. 8.7

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Fig. 9.1

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Fig. 9.2

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Fig. 9.3

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Fig. 9.4

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95	91 Drey/Founders: Growth; F	-0.01%	89	0.24%	37	0.22%	45	0.07%	62	-0.10%	78	-0.14%	82	-0.14%
96	92 Delaware US Growth;Inst	-0 33%		-0.19%	<u>∞</u>	-0.14%	78	-0.09%	73	0.14%	48	0.21%	4	0.10%
26	93 Concert Inv: Gro;1	0 14%		0.28%	32	0.25%	æ	0.20%	46	0.23%	99	0.12%	21	0.27%
86	94 Columbia Growth	0 11%		0 11%	25	0.22%	47	0.22%	44	0.18%	44	0.25%	98	0.17%
86	95 CitiFunds LgCp Gra;A	-0.03%		-0.08%	72	0.13%	25	0.05%	64	0.09%	25	0.14%	49	0.13%
100	96 Chase: Equity Growth; Prm	-0.02%		0.09%	29	0.25%	41	0.25%	æ	0.33%	24	0.31%	3	0.47%
101	97 CG Cap Mkts:Lrg Cap Gro	-0.02%		-0.03%	88	0.02%	89	-0.02%	8	0.03%	8	0.04%	9	-0.01%
102	98 Burnham Inv:Burnham; A	0.25%		0.23%	æ	0.31%	35	0.29%	23	0.20%	40	0.19%	₹3	0.28%
103	99 Bridgeway:Social Resp	-0.14%		-0.06%	83	-0.03%	69	0.02%	89	0.07%	28	0.33%	27	0.09%
104	100 Boston 1784: Gro & Inc	0.12%		0.17%	45	0.06%	64	0.14%	SS	0.20%	41	0.11%	쏬	0.15%
105	101 BlackRock:Lg Cp Grinst	%90 O		0.05%	62	0.15%	33	0.09%	8	0.06%	8	0.12%	25	0.11%
106	102 Berger Growth & Income	0.10%		0.20%	42	0.11%	82	0.31%	88	0.17%	45	0.14%	47	0.04%
107	103 AXP: New Dimensions; A	0.43%		0.35%	21	0.32%	ĕ	0.23%	41	0.18%	43	0.16%	46	0.02%
108	104 AXP: Growth Fund; A	0.16%		-0.01%	64	0.04%	99	0.03%	2/9	-0.35%	104	-0.49%	80	-0.52%
109	105 Atlas: Gro & Inc; A	0.27%		0.17%	44	0.23%	44	0.19%	<b>6</b>	0.24%	አ	0.11%	ස	0 10%
110		0.37%		0.37%	R	0.49%	7	0.49%	<del>-</del>	0.49%	=	0.50%	6	0 36%
111	107 Arbor: OVB Cap App;A	-0.35%		-0.29%	8	-0.46%	102	-0.43%	102	-0.27%	8	-0.26%	8	-0.22%
112	108 Arbor. GoldenOak Gro; Inst	-0.58%		-0.53%	113	-0.49%	90	-0.13%	<del>∞</del>	0.07%	8	-0.03%	67	0.08%
113	109 Amer Cent: AC Ultra, Inv	-0.86%		-0.48%	110	-0.58%	113	-0.75%	117	-0.74%	116	-0.61%	114	-0.55%
114		-0.76%		-0.70%	117	-0.74%	116	-0.69%	114	-0 32%	102	-0.20%	87	%60:O-
115		0.49%		0.38%	77	0.25%	뽔	0.16%	21	0.11%	54	0 24%	37	0.49%
116	112 Allg/Mont&Caldwell Gro;N	0 60%	თ	0 52%	æ	0.52%	12	0.72%	m	0.53%	හ	0.38%	23	0.42%
117		0.62%		0.52%	o,	0.64%	4	0.40%	7	0.41%	9	0.44%	13	0.34%
118	114 Alger Ret: Growth	-0.62%	110	-0.24%	88	-0.48%	50	-0.49%	9	-0.41%	105	-0.33%	26	-0.06%
119	115 Alger Ret: Cap Apprec	-0.81%	•	-0.54%	114	-0.95%	113	-1.06%	120	-0.81%	119	-0.81%	113	-0.47%
120		-0.08%		<b>.0</b> .06%	2	-0.12%	32	-0.11%	92	-0.04%	2	-0.10%	22	0 01%
121	117 AIM Eq:Charter,Rtl A	0.24%		0.13%	49	0.12%	8	0.04%	92	-0.02%	88	~9O'O-	2	-0.16%
122	118 AIM Eq: Blue Chip;Rtl A	0.51%		0.36%	24	0.47%	9	0.48%	12	0.43%	7	0.39%	23	0.32%
123	119 Aetna: Growth; I	0.36%		0.19%	<del>4</del> 3	0.17%	25	0.24%	8	-0.05%	7	-0.01%	R	0.09%
124	120 Advantus Horizon;A	-0.37%	89	-0.33%	6	-0.18%	91	-0.26%	92		23	-0.07%	E	-0.08%
125	121 Accessor: Growth; Adv	0.37%	К	0.38%	22	0.41%	77	0.34%	21	0.34%	R	0.45%	Ξ	0.51%
126	122 ABN AMRO:Growth, Com	0.27%	R	0.31%	8	0.26%	Ж	0.14%	54	0.22%	8	0.32%	23	0.25%
127 128														1.
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Fig. 9.5

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[Page 1 of 2]

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Additional r	egistered	practitioner(s) na	med on si	upplemental R	egistered	Practi	itioner Info	ormation she	et PTO/S	SB/02C	attached heret	0.
Direct all corre	esponder			Number de Label				OR	□ c <sub>o</sub>	rrespoi	ndence addre	ess below
Name					02	215	87 				<u> </u>	
Address	Address											
Address												
City						S	tate		ZIP			
Country			····	Telephone					Fax			
I hereby decla believed to be punishable by	true; and fine or im	statements mad further that thes prisonment, or b issued thereon.		of my own kn	owledge							
Name of S	ole or F	irst Inventor					A petitio	n has been	filed for	r this u	nsigned inve	ntor
G	iven Nan	ne (first and mic	ddle [if a	ny])				Family	y Name	or Sur	mame	
		John	_					I	Kihn			
Inventor's Signature			John	Lihn	/						Date	6/6/200
Residence:	City	West Wi	ndsoı	State	NJ		Country	t	JSA		Citizenship	USA
Post Office	Address	1223 Jan	nie B	rooks La	ane	· · · · · · · · · · · · · · · · · · ·						
Post Office	Address											<u>-</u>
City	West	Windsor	State	NJ	ZIF		085	550	Cou	intry	US	SA
Additiona	al invento	ors are being na	med on	thesur	plement	tal Ad	Iditional	Inventor(s)	sheet(s	) PTO/	SB/02A attac	ched here